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The Brazen Gates from Ballawat.

THE PHŒNICIAN LINK.

IF we are to regard the period of the middle Assyrian Empire (B.C. 900-721) as the iron age of that nation, we certainly must give to that sombre material a rich damascene of culture. The empire which the three Assyrian Cæsars carved with their swords may not have shone with all the brilliant gilt of literary and scientific culture, or with that lavish patronage of the arts which marked the Augustan age of the Empire (B.C. 721-625), but it certainly has the merit of being a period when from the studios of Nineveh there went forth to many lands a message of beauty, which oft-times met with a response, and of which even to this day there remains a faint tingling echo. Although essentially the creation of the god of war, and ruled and regulated by prompt and continued military action, this middle empire was not without its conquests in the more peaceful world of art, and side by side with that triple alliance of Egypt, Phœnicia, and Assyria, as factors in the polity of western Asia, there was formed in the studios of Nineveh a trinity of arts which spread its doctrines far beyond the realm of its sterner colleague.

The contact between the three art-schools of the East in the studios and workshops of Assyria, which took place during the middle empire, was the means of spreading, through one of the members of the Triumvirate, the practical trading Phœnician, the first germs of art to the West, which in after-time bore rich fruit, when tended and nurtured by those who knew not their origin. The appearance of the tableau of the surrender of Tyre and the merchant princes of the Phœnicians to Shalmanesar III., which we described in our former notice of these rich monuments,* forms, as it were, an initial-plate to a new chapter in art. Important as it is as illustrating the history of the empire of Assyria, and recording the triumph of the conqueror Shalmanesar III., it has, as we pointed out, an interest beyond this information,—a plate illustrative of the great history of civilisation and art. One by one, with patient labour and research, the students of history and archæology are gathering from the spoil-heaps of the past the links of that golden chain which bound the Persian Gulf to the Pirœus. That thin waving thread of the true metal of history which has to be traced amid a dark and tattered robe of fiction and legend is gradually being drawn forth to guide us to the home of art. The historic record of the great Assyrian conqueror which Mr. Rassam has so fortunately rescued from the grave of Ballawat has come to us, not only as a messenger and guide along the tortuous paths of Oriental history twenty-seven centuries ago, but it also acts as our Mentor along the pathway edged by this golden thread of art and culture, and enables us to track its glittering web through the tangled skein of Assyrian and Egyptian civilisation.

The fall of the early empire, which followed shortly upon the death of Tiglath-Pilieser I. (B.C. 1100), resulted, as we pointed out, in the rise of an important confederation of semi-allied states on the land between the Euphrates and the Western Sea. This league, which formed, as it were, the barrier between the Assyrians and the Phœnicians, is not, as its records prove, to be regarded as a confederation of barbarian tribes, who, like the Goths and Huns, delayed the spread of civilisation for awhile. The discoveries at Carchemish, at Ibreez in Karmania, and other places which we have described in our notice of Syrian archæology, show that we must regard this confederation as no mean factor in the Western spread of civilisation and culture. It was the overthrow of this confederation and the opening of the seaboard to the Assyrian host that we see recorded in the inscriptions and on the monuments of Shalmanesar and his father. But the very wars which accomplished this task,—the battles of Karkar, and those around Damascus and other cities of Syria, which broke this league,—were in themselves productive of great results in the peaceful realms of art and culture. The sixth year of the reign of Shalmanesar (B.C. 854) saw the overthrow of the Syrian league, and from the stele erected at Kurkh, near Diarbeker, on the Tigris, we gain the knowledge of the composition of the army of the allies, while at the same time it enables us to see the ethnic composition of the population of Syria in the ninth century before the Christian era.

List of Allied Troops (WAI. III., pl. viii., *lines* 90-95).

King.	State.	Chariots.	Tents.	Men.
Benhadad	Damascus ...	12,000 ...	12,000 ...	20,000
Irkuleni	Hamath	700 ...	700 ...	10,000
Ahab	Israel	2,000 ...	... ...	10,000
,, ...	Geim	... ...	... ...	500
,, ...	Egypt	... ...	... ...	1,000
,, ...	Irkanta	10 ...	... ...	10,000
Matinu-Bahal ...	Usántai	... ...	... ...	20
Adoni-Bahal	Siana	30 ...	... ...	10,000
Gindubuk	Arabia	... 1,000 camels		...
Bâsha, son of Rehub	Amon	... ...	... ...	...
		14,700	12,700	61,700

The composition of this host clearly indicates the polity of Syria at the time. The three large kingdoms of Damascus, Hamath, and Israel, the latter still retaining some of the power gained during the zenith period of the reign of Solomon, formed the leaders of the confederation. In addition to these states we find a number of tribes sending contingents of men. The people of Arvad or Ardus, and the tribe of the Sizanians, who have Phœnician rulers, but the latter do not appear to be of Semitic origin. The tribes of the Irkantians, the Usantians also, only figure in this confederation, and afterwards vanish from the page. Yet these clans mustered to the number of some twenty thousand men, and must have considerably helped the host which faced the army of Shalmanesar on the banks of the Arunta (Orontes) in B.C. 854. The eastern Hittite state of Carchemish on the Euphrates had been reduced by the battles of the previous reign, and so does not figure in this confederation, neither does Tyre, which probably reserved a cautious neutrality. Turning now to the war panorama of Shalmanesar, we look for illustrative tableaux of this great campaign, and we find much of interest. Starting from Nineveh in the month Iyar (April) of the year B.C. 854, the Assyrian king took the route for Carchemish, where the Hittite king awaited his coming to render tribute and service, and in the brazen plates before us we have a representation of this scene. It resembles in many respects the tributary procession so often represented on this and other monuments. The offerings of Sangara, the ruler of the city, are received by the king, and the usual deputation headed by the military officials who introduce the tribute-bearers. From the inscriptions of Shalmanesar we learn the nature of this tribute, which was poured out before the conqueror king. There were 300 talents of gold, 100 talents of silver, 300 talents of iron, 1,000 lumps of copper, possibly plates to be utilised in the making of these gates, 1,000 woven robes, the dresses of his daughters, 20 talents of blue stone, in lapis-lazuli, 500 oxen, and 500 sheep. Other tribute lists give ivory, both plain and carved, skins of animals, and other objects, all showing that Carchemish, the Kar-Gamis of the Assyrian inscriptions, had become a wealthy emporium on one of the main arteries of Western Asia. It formed, as its position indicates, the point of meeting of at least three trade routes, and hence it rose into commercial importance. From Carchemish the march was continued to Khalman, or Khilbun, the modern Aleppo, which had long been a city of importance in Syria. Here the advancing hosts of Assyria halted, and the warrior king, hoping to gain the favour of the god of the Syrians, offered victims to the god Bin or Rimmon in his shrine at Khalman. Of the ceremonies at Khalman, the receipt of the tribute of its ruler, and of the religious rites performed in the temples of the city, the royal scrolls afford us no illustration, but they have preserved on record the sketch by an accompanying artist of an interesting scene which occurred on the march towards the front. This is the surrender of "the city of Khazaz," a site which is evidently to be identified with the modern village of Azaz or Anzaz, a place

* See p. 532, *ante*.

visited by Niebuhr, and also by Col. Chesney when engaged in the Tigro-Euphrates survey. This city was situated a short distance from the east bank of the river Aprie, a river which has to this day preserved its name in its designation of the Afrin or Ifrin, and lay evidently on the commercial route between Tyre, Khilbun (Aleppo) Carchemish, and Nineveh. In the reign of Shalmanesar's father Assur-nazir-pal, it had been besieged and taken after a gallant resistance. It was then ruled by a monarch named Dibbarna, and its tribute offerings indicate it to have been a city of great wealth. "To Khazas, the city of Dibbarna of the Palinai I approached: gold, silver, and woven and dyed dresses his tribute I received." Such is Assur-nazir-pal's description of his visit and the tribute of the city. In the plate which the artist of Shalmanesar has produced for us we see the surrender of the city to Shalmanesar in B.C. 854. The artist in the scroll before us has evidently sought to convey at least two incidents in the attack on Khazaz,—the siege, and the surrender after the defeat of the forces of Dibbarna. Before the city the Assyrians have built a circular camp, and in the plain between this camp and the city the battle rages, and is vividly depicted by the Assyrian artist. Although a portion of the city has been fired by the darts of the Assyrians, a gallant resistance is made by the Syrian foes, who push down the scaling-ladders of the besiegers and hurl them from the walls. The Assyrian assault is led by the picked body of archers, who advance firing, under cover of large square shields, held by their attendant bearers. In another part of the field we see a series of single combats between Syrian and Assyrian soldiers. Chariots and horses bear down upon the Syrians, and victory rests with the invaders.

Defeated, their city in flames, there is nothing left for the subjects of Dibbarna but surrender to their strong foe. And in another portion of the scroll we see the submission of Dibbarna and his people to the conqueror, Shalmanesar. The artist in depicting the surrender of this city of Khazaz has shown the long line of captives being marshalled into the presence of the great king. The line is headed by the defeated monarch and his family, who are attended by the usual deputation of civil and military officials of the victor king. With humble aspect, dreading his wrath, they come delicately before the victor who stands attended by a brilliant staff of officials, soldiers, and priests. The male captives, who follow the Syrian monarch are nude, and have their hands tied behind them by cords, as are represented the captives in the Egyptian inscriptions. The women and children follow, and the rear is brought up by the Assyrian soldiers carrying spoil and driving the cattle. The faces of the captives in this scroll are most carefully treated, and indicate a marked Semitic type,—the curved nose, the pointed beard, and the arrangement of the hair, all showing them to be a Semitic race. The representation of one child, who follows his mother, is most truthful, and evinces more feeling and tone than the majority of representations in this series. There is a strong indication of careful study in this and other plates of the features of the nations represented. From Khazaz the army moved on across the Aprie (Afrin) in the direction of Karkar, a city under the rule of Irkhuleni, king of Hamath. In the course of this short march the Assyrian armies captured two cities of Irkhuleni, and then arrived under the walls of Karkar. To these warlike deeds of the Assyrian king in the Hittite campaign there is allotted one whole scroll in two friezes, the upper band of sculptures representing the siege and capture of Ada and Parga, two Hittite cities, and the lower the surrender of Karkar. In the upper frieze the Assyrian camp is represented as pitched between the two cities which are being besieged simultaneously. The camp here represented is square or oblong in shape, insected by a broad street, with a gateway at each end. This arrangement resembles much the Roman camp, with the broad *principia* and the two *portæ principalis, dextra* and *sinistra*. The Roman Prætorium has its equivalent in the royal quarter of the camp, which stood on the northern side of the *principia*, adjoining in this example the *porta sinistra*. Here we see the royal pavilion, now empty but still guarded by a spear-man as sentry. The pavilion is of the same type as that always met with on the monuments of this period, being a canopy supported upon four posts or columns, decorated with figures of the Syrian goat. This seems, as it were, to have been the crest of the kings of the middle empire, as it occurs often on the arms and dresses of the king. In another portion of the Prætorium we see the royal *ch ef* engaged in preparing the king's meal. A small portable cuisine stands before him, and an array of metal pots and pans, filled, no doubt, with dainty foods for his lord and master. With a small fan or flap he blows the smouldering embers in a brazier into a ruddy glow, and watches the cooking of the objects before him. The lower or southern portion, adjoining the *porta decumana*, is occupied by the commissariat department, who may be seen engaged in the preparation of the bread for the soldiers' meal. One man is busy grinding corn with a pair of hand stones,—while another, from a sack or corn-bin, is handing him the grain,—he in his turn passing the flour prepared to a companion, who mixes the dough in a trough or basin. The space at the command of the sculptor in these plates did not allow of his depicting all the varied scenes of camp-life with the armies of Assyria, but in his examples before us the artist has certainly been most judicious in his selection of representative scenes. In the example in the lower tier, representing the camp before Karkar, he has shown an almost similar scene, only here the bread for the troops has been baked, and two soldiers are engaged in piling into a great heap the flat hearth-baked cakes. Mr. Rassam brought from Nimród, during this last expedition, an interesting fragment of sculpture, which represents a bivouac of Assyrian soldiers round the camp-fire baking in the embers the flat burnacks or cakes, similar to those made by most of the Eastern nations in the present day. Of the cities besieged by the Assyrians, and here pictured by the royal artist, Parga is the larger and stronger, and evidently gave the Assyrians some trouble, as it necessitated the bringing to the front of a siege train, as here represented by a huge battering-ram of peculiar construction. This engine of war, which is pushed up against the wall of the beleagured city, is in the shape of a long low wagon, mounted on four wheels. It would appear to be composed of large plates of metal riveted together. The front portion is elevated into a kind of breast-work, and to this is riveted the ram, which appears to consist of a large nozzle of metal, terminating not as most examples, in the head of a ram, but in that of a boar. From the construction of this example, which differs entirely from any of the specimens given on the sculptures, it would appear that this plated projection was a cover for a ram which was worked by men covered by the breastwork. In this cumbrous engine, which has been pushed up against the walls of the city, are six picked archers, who, from this *point d'avantage*, are firing on the besieged, being protected from the return fire by large square shields of leather, held above the breast-work of the car. Covered by their fire a man is guiding with a chain the blows of the engine which batters the walls. Upon the ramparts of the Hittite city archers stand and pour down a heavy fire on the besiegers, whom the artist has represented as attacking the city on either side. The siege on the right hand is carried on by picked bodies of the royal troops, archers advance to the walls, and charioteers scour the plain, breaking the ranks of the opposing Syrians, and trampling beneath their horses' hoofs the dying and dead. The siege of Ada, which occupies the right-hand portion of this scroll, is apparently conducted by the monarch in person. In his royal chariot, accompanied by his armour-bearer and the driver of his chariot, he heads the chariot charge, which bears down the Syrians. Scaling-ladders are against the walls, and under the cover of a heavy fire of the infantry of the line, the bowmen of Assur, the storming party charge the ramparts. In the lower tier of this scroll we see represented the capitulation of the city of Karkar (Aroer) another of the strongholds of Irkhuleni, the king of Hamath. This scene has little interest beyond its historic value, the scene depicted by the artist being a mere repetition of the oft-repeated tribute-scenes.

Ada, Parga, and Karkar had formed bases upon which the gradually retreating Syrians had fallen back, as the hosts of Shalmanesar, only making such opposition as might enable them to gather their forces on the banks of the Orontes, in the rear of Karkar, for the last great effort against the invaders. Karkar may possibly be identified with the village of Kalkis, or Karkis, a short distance from the east bank of the Orontes, and here took place the battle which broke for ever the Syrian league, and which forms a turning-point in the history of the tenth century before the Christian era, and it is thus described by the Assyrian historian:—

"With the mighty powers [hands] which Assur my lord had given me.

With the mighty weapons which the great hero * going before me had furnished I fought with them.

From Karkar to Kirzan their defeat I accomplished: 14,500 of the soldiers, warriors, with my weapons I smote.

Like Rimmon,† a deluge over them I poured out; their wounded the face of the land I caused to fill.

The whole of their army with my weapons I struck down; with dead bodies the fields I covered in that district, and to a desert I turned it.

Their spirits I crushed and broke. The river Orontes with their bodies I choked."

Such is the Assyrian historian's account of this great victory of the Assyrians over this gathering of the clans of the Khita, and the fame of the arms of Assyria spread far and wide over the West, and the distant Court of Egypt heard with trembling the news of this victory, which opened the Phœnicia-Egyptian highway to the armies of Assur.

With a rich spoil gathered from the camp of the defeated allies, with all the offerings of the nations who hastened now to render him homage, and with the tributes gathered on the march, the Assyrian conqueror returned to Nineveh, there to render to the gods, his protectors, the homage of a faithful devotee.

But the glories of this victory were not merely those of a military conquest, for by this great battle Shalmanesar had completed that great task commenced by his grandfather, Tiglath-Adar (B.C. 900), continued by his father, Assur-nazir-pal, and now completed by himself,—the welding together of the links in the golden chain of culture and art which coupled the maritime Phœnicia to the Athens of Western Asia. This task now accomplished had soon produced its results in the busy tide of messengers of commerce, art, and culture, who swept along the now uninterrupted highway, bearing to distant lands messages from the studios of Nineveh. Long ago the hardy sons of the sea, the sea-going Phoinike, had forged for themselves a link which bound them to the shores of distant Greece, and it was this link which was now rejoined to the Assyrio-Phœnician one, after a severence of some three centuries. It was these Phœnicians who had borne to the Greeks that alphabet of letters which the latter had adopted and moulded to a language peculiarly their own. This very alphabet, which, in its modified form, has handed down to us the glories of the Greeks of old, had been in far remote times copied, modified, and adopted by those missionaries of culture from a language totally different from their own. That instinct of judicious selection, and still more judicious modification of the inventions of others to further his own ends, which his forefathers, on the shores of the Persian Gulf, had shown many centuries before, in their adoption of the cuneiform syllabary from the Akkadian aborigines of Babylonia, had never been abandoned by the cunning Phœnician. The letters, the arts, the religion, the mythic stories and legends of nations with whom he came in contact were all fish to his net; they were all capable of his adapting, modifying, and rendering suitable to the requirements of his customers on the shores of the great sea. As his ancestors had borne from the low land home on the shores of the Persian Gulf the first rudiments of that alphabet which was the remote parent of the one which now transfers our article to our readers, so had he gathered, modified, blended, and rendered suitable to his wants the art alphabets of Assyria and Egypt. The works which he produced under this system of adaptation he bore to Greece, and there he laid the first grains of seed which in after-time bore rich food when nurtured and tended in the fertile soil of the Hellenic mind. In the epic of Homer, the composition of which we may now with some degree of certainty place between the time of the fall of the early and the rise of the middle Assyrian empire, gives the precedence in the priesthood of the art mission to the Sidonians, who figure as the πολυδαιδαλοι, or "highly ornamental work-

* The war god, Nergal, from whose temple the brazen gates come.

† The Assyrian Jupiter Tonans.

men." From Sidon Paris had borne the rich embroidered robes in the store of Hecabe. The Homeric writings bring before us the cunningly-fashioned silver and bronze bowls of the Sidonioi,—and this city has always the precedence over its sister Tyre. Such being the case, it naturally indicates that such a state of things existed in a period previous to B.C. 900; that is, the rise of the middle Assyrian empire,—a time when Tyre, if not taking precedence of Sidon, was certainly on a par with it. There is a statement in the writing of Josephus which places the foundation of Sidon as 240 years before the dedication of Solomon's temple. That would give us a date of about the middle of the twelfth century B.C., —a period certainly not suitable to the foundation, but very applicable to its rise into prominence as the chief export station from Western Asia. The theory of Mouvers, which places the foundation of Sidon as not later than the sixteenth century before our era, certainly receives some of the strongest support from the Babylonian monuments, as we may certainly regard it as one of those colonies the offshoots of the invasion of Syria by the armies of the Semitic dynasties from Babylonia. If, therefore, we are to regard the Homeric times of Greece as contemporary with the Sidonian prominence in Phœnicia, we may place it in the latter part of the twelfth or the beginning of the eleventh century before the Christian era,—a period when the early Assyrian empire was at its zenith, and when there was an unbroken link between the Assyrian capital, Assur, and the plains of Phœnicia, and consequently a free transmission of art and culture. This link was broken on the fall of the early empire, and was only re-united, some two centuries after, by the campaigns which we have just described. Seeing, therefore, as we do, how little of originality there was in the Phœnician,—how he was but a broker in the world of art,—we may find in these monuments which are now before us of the middle empire some comparisons with the art of Homeric Greece. Here, on the threshold of our investigations we are met by a difficulty in the lack of any remains of Greek art which can be ascribed to Homeric times. With the exception of the Lion Gate at Mycenæ and some of the Schliemann treasure, there is hardly a single monument which can be regarded as contemporaneous with the days of Homer. Even to this one monument, the Lion Gate, we certainly might find a counterpart in Assyrian art in the lion group which adorns the scabbard of the sword of Assur-nazir-pal from Nimroud,* or the fountain at Bavian. But there is one *chef d'œuvre* of Homeric art vividly described, rich in its poetic feeling, and yet not for one moment to be regarded as a creation of the poet's brain. In describing the shield of Achilles, Homer had before him some similar object on which to found his poem. It is to this grand Homeric record that we find a complete and unexpected parallel in the brazen gates at Ballawat. These brazen gates, which were erected in the temple at Ballawat, within at least ten years after the battle of Karkar, do not certainly fall without the circle of art-comparison; and even if such were the case, it is evident that similar gates had been erected by Tiglath-Pilieser I. (B.C. 1100); and, therefore, we may reasonably compare them and the other brazen monuments of the period with this *magnum opus* of Homeric art.

First, as to the manufacture. The gates of Shalmanesar III. are entirely of beaten bronze, decorated in *repoussé* work ranged in parallel bands, divided by borders decorated with rosettes or stars. The only tools, therefore, in use would be those which had been at the service of the Homeric artist,—the hammer, pincers, and the anvil, or bed, on which the relievi were beaten out. In point of workmanship we may well compare them as the shield is described,—

> "With a bright and starry border,
> Three-fold thick set round about,
> Downward hung its belt of silver,
> Five the layers of the shield,
> And with skilful hand he sculptured
> Rare devices o'er its field." †

We do not as yet meet with any shields of bronze which will coincide with this description set forth by Homer in the monuments of Assyria, nor are the examples on the stone sculptures carried by the Assyrian king or his warriors of a corresponding character; but we have not to follow the chain now connecting Phœnicia and its customers with Nineveh far before we meet examples. Among the treasures from Curium, in Cyprus, found by Cesnola,* is a portion of a shield, which has a frieze representing a lion-hunt, and showing that such a *repoussé* mode of decoration in concentric bands was applied to shields by the Phœnician traders who supplied Cyprian warriors. Other examples which will support this theory are to be found in the shields found in the tombs at Veii and Palestrina, where we find the arrangement in concentric bands, with stars or studs as decoration.† The monuments from Ballawat being essentially connected with war and the chase, we shall not expect to find parallels to all the scenes on the shield. This is not to be expected, as in the latter we deal with a distinct civilisation. Still, there is sufficient to be gathered from the former to show that Assyria, with the aid of the modifying Phœnician trader, could, and possibly did, produce such a work of art.

In the sieges of Ada and Parga, and the surrender of Karkar, we find every element of the description of the second Homeric city on the shield:—

> "But before the second city
> Bright in arms two armies lay,
> Evil choice one gave the other,
> Either half the goods to pay
> In that smiling town, or see it
> Given to fire or slaughter. They
> Brook'd it not, but arm'd for ambush.
> Wives beloved and stripling hands
> Guard the walls: off march'd the bands."

In the example of the siege of Ada on the plate described before we find almost every requisite for the scene. The Hittite host has evidently marched forth to wait for the advancing invader in some selected spot near the city. The wives and children, together with the aged who are past the power to wield the sword in defence of the homes and hearths, man the ramparts, and eagerly scan the plain and distant battle-field. But the Assyrians are equally eager for the combat, and here resumes the contrast:—

> "But the host before the ramparts
> Heard the bellowing din from far;
> Mounted each man on his chariot,
> Drove the prancing steeds to war.
> Quick they came, they closed in battle,
> Ranged along the river's bank,
> And they hurl'd the sharp-tipp'd lances,
> Each athwart the other's rank."

Surely this scene and the description of the battle which follows may well be compared with the scenes at and preceding the battle of Karkar. The chariot charge, the strife and tumult, the fury of horrid war, are all to be gathered from the scenes depicted on these brazen scrolls, when placed side by side with the inscriptions which they illustrate. As an example of the value of the Phœnicio-Grecian links which, as it were, show us transition stages, we may notice a silver patera from Amathus, discovered by Gen. Cesnola, pl. xix. Here, treated in the round, we have an almost similar scene to those depicted on the bronze scroll representing the final stage in the Hittite campaign. The Phœnician adapter has blended both Egyptian and Assyrian art in that curious style so often met with in his wares. In this example we see a walled city, defended by armed hosts on the ramparts, against a besieging army. As in the Ballawat examples, scaling-ladders are against the walls, and the attacking host is led by archers, and supported by mounted chariot-chargers. Spearmen and archers hurl their sharp-tipped ("copper tipped") lances at the defenders, and attempt to carry the ramparts by storm. This patera, complex and confused as its decoration is, is evidently an adaptation of the scenes pictured on the Ballawat gates.

Space will not permit us in this notice of these priceless monuments to trace more of the examples; but sufficient has been done to prove that not only do these brazen gates come to us from the grave of Ballawat with a message of the history of a buried empire, but they also come to us with a rich story of art, and, when studied as they deserve, they will truly furnish us with a new chapter as a preface to Homeric art.

In dealing with this Phœnician and Syrian question we have but broached one vein of the rich mine of wealth to which these scrolls prove the "open, sesame!" In a future notice, when dealing with other features of these treasures, we hope to show that not only do they connect us with the cunning traders of Tyre, but they also bring together in the studios of Nineveh and Calah a trinity of art by establishing a close connexion with the æsthetic school of the Nile valley.

* Layard, Mon. Nin., series i., plate 35.
† Gladstone, *Contemporary Review*, vol. xxiii., 1874.

* Cesnola, pl. xx.
† Archæologia, vol. xli., p. 199.

"ON THE INFLUENCE OF AUTHORITY IN MATTERS OF——"

"OPINION" is the word which completes the title of the late Sir Cornewall Lewis's celebrated work; let us substitute "Architectural Taste," and it may not be inopportune to develop some considerations that illustrate the theme so modified.

A recent letter of Mr. Oldrid Scott to the *Times* in reference to certain well-ventilated controversies respecting the restorations at the Cathedral of St. Albans incidentally suggests the discussion of principles which we may deal with as independently as though we were no less uninformed about the parties that have been committed to the battle of St. Albans, than the Duke of Wellington is said to have been as to the nationality of the combatants at the battle at Towton. This letter, dated May 20, was chiefly concerned with a question respecting painted ceilings, but it included the following paragraph:—

"I am sorry that Mr. Marks should call our new roof 'an uncouth monster.' In one sense the cathedral itself is a monster, and its covering must be in proportion; but if this very straightforward, high-pitched roof, covered with respectable lead, is, in his opinion, 'uncouth,' so must also be those at Westminster, at Salisbury, at Lincoln; so that, as far as this is concerned, the committee and public may safely retain their peace of mind." The equanimity of the committee,—of any committee,—is in its own keeping and usually well taken care of, but that of the multitudinous and more composite public cannot be taken for granted always precisely on the same grounds. There is a public within the public that will not even shrink from startling the composure of authority, by demurring to the conclusiveness of the most venerated and even venerable precedents when cited indiscriminately. Students of art and architecture will have the conviction that, if worthy students, they,—

> "Have right ill deserved
> The scourge of greatness to be used on them,
> And that same greatness, too, which their own"

conscientious and intelligent appreciation—

> "Hath help to make so portly."

One at least will not scruple to say that he recognises and recoils from offensive "uncouthness" in the external visible coverings of every one of the examples given, and is convinced that the original architects, at least, could have done better "had they taken more pains." Let us take, in reply to the challenge, and for the sake of varied illustration, the case of Salisbury Cathedral. Here we have the high-pitched roof sufficiently pronounced, and we may also allow it to be "straightforward," if assured that the term does not cover an ambiguity. The time-honoured reason for the existence of the steep pitch,—its aptitude for throwing off snow in a wintry climate,—is unavailable here, for the snow would not be thrown off, but only down into the gutter, where a parapet retains it just where not wanted, dangerously at an organic junction, and on the top of the wall. This combination of parapet and high-pitched roof is so constantly recurring in connexion with the very noblest Gothic architecture, that, by inveterate custom and familiarity, good sense is apt to be befooled and good taste vitiated; and even the brave and the right-minded are sometimes disposed to tenderly palliate the inconsistency, or, what is still more unfortunate, become unconscious of it. It is so constantly before our eyes that we need not be surprised if it is too often accepted at once; and the intermediate stages of enduring first and then pitying are omitted before it is enthusiastically embraced. The good old honest, in the best sense "straightforward," Norman corbel-table was unfortunately deserted when it should have been developed, and architecture, turning its back upon itself, put the cornice virtually within.

But these roofs may be taxed as "uncouth" because inconsequent in yet another respect,—as destitute of any expressed and definite relation to the buttresses. It does not seem difficult to show that they are bound to declare such a relation. A buttress may no doubt be fairly employed merely to stiffen

a wall from interval to interval, and then its breadth would naturally and appropriately exceed its projection. Some very good Gothic architecture, indeed, is not to be absolved from the incongruity (such is the case with St. Joseph's Chapel at Glastonbury) of assigning this proportion to buttresses proper,—to those projections which have the function of resisting the thrust of a vault, a thrust which acts at right angles to the enclosing wall. In the first case, of what we may call a pilaster-buttress, the true function of the member may doubtless be masked, and if the openings are of inconsiderable span, we are not bound, it may be said, to assume that the interior is vaulted and in need of assistance; and we may even indulgently justify the flat buttress as intended to resist pressure from arched openings in the wall-curtain that abut in the direction of the flatness. But these palliations do not avail when, from the magnitude of the structure, and indeed our necessary familiarity with the interior, the fact of a considerable interior vault is "gross, open, and palpable"; and matters become urgent indeed when, as at Salisbury, very important projecting buttresses are associated with and dominate exceptional and subordinate flat buttresses. These superior members, then, boldly and conspicuously assert their summons to a special function as they rise to the level of the parapet,—to the level at which, if anywhere, that function is most responsibly called upon and might be most expressively pronounced, but where it suddenly is lost sight of entirely,—passes beyond ken. For anything that is intimated, the projecting buttresses of the north transept at Salisbury exhaust their usefulness with very unnecessary expenditure of cost and material, and with falsely-disposed material, in supporting the wall which is perforated with windows, but not therefore weak enough to need such help, and in any case not help in this direction.

These buttresses have manifestly no individual relation to the roof, which has every appearance of resting, as indeed it does, a dead weight and lid-like upon the outer walls, or at least upon the inner half of them which is not occupied by the gutter. But all the more fitting were it that the true structural dependence should be allowed a certain expression. The decoration of construction has been much insisted upon as the characteristic of Gothic architecture; but the appropriately frank expression of the main responsibilities of construction is something that must be provided for before the more purely decorative treatment supervenes. Let it be said, then, that such ranks of buttresses which do not carry an indication of the point,—of any point,—at which the arch that they are bound to accommodate takes advantage of their services, must wear something of the aspect of labourers sturdy enough, but leaning idle against a wall. The expression desiderated here is provided in the first bay north-west of the central tower of Salisbury by the flying buttress; but this only makes the absence of some equivalent expression in the other cases more salient to observation. It is unnecessary to remark that the compound buttress in the north-west angle has no appearance worthy of the true dignity of its function, as subserving the stability of the central tower, and is, in fact, an eyesore, which damages unfortunately a point of view most critical for full appreciation of the majestic dignity of the tower and spire.

But to return to the subject of the roof, and its affirmed uncouthness, let us consent to accept the relation of external buttresses and internal vaulting arch to be sufficiently made out. Even so there will among those who so far are indulgent be some who still are offended at a certain uncouthness in the compartments receiving no acknowledgment whatever on the high-pitched and most conspicuous roof. It may be said that in the framing of such a roof as we have admitted, a structural obligation for such distinction does not exist. The office of the buttress is concluded when the thrust of the arch of the vaulted roof is provided for; and the protective covering, the roof shield, exerts no other pressure than by equally distributed downpress. This may be so, though it were not unnatural that the timber-work, the carpentry of a roof-shield of such extent, should be strengthened uniformly from point to point, and moreover that the bearing of these weightier divisions should be utilised, if not for their own advantage, to help the resisting power of the buttresses, by coinciding with them. In any case, the appearance of such coincidence would be expressive, on the same principle as a pinnacle appeals to our consciousness that weight in such a position favours stability, *pondus addit robur*. But whether any true structural dependence comes into question or not, it would be but graceful, if we may be allowed so to express ourselves, for the roof-shield to exhibit some sympathetic recognition of the compartments that it protects. If we look to the organic world for a parallel,—and the justification of architecture is constantly to be sought in such parallels as an ultimate appeal,—we might say that the relation in question is much the same as that between skin and skeleton in the animal creation. By arrangement of stripes or spots or dappled lines we constantly observe how the most sturdy and most delicate adjustments of the interior receive an harmonious visible response without. Nay, our criticism shall be even carried further, and so far from being weakened thereby, will be rather clenched and confirmed. Without hesitation we challenge as uncouth the manner in which the high-pitched roofs of the nave and transept are allowed to bolt against the central tower. As this is managed, there is an absence of any expression externally of the important fact that the tower does not grow up solid from the foundation, but is pierced by wide and lofty arches, north and south and east and west. Critics are fortunately not bound to suggest the alternative treatment that would fully correct the treatment which they may most decisively convict as faulty; and if they indulge themselves with suggestions, it is always on the understanding that they are confessedly at the mercy of the first objector. As the critic is advised at present, and under provocation of a challenge, the conviction is not to be suppressed, that if a cathedral roof acknowledged, however moderately and modestly, the interior divisions of the bays as answerable to the buttresses, a more pronounced marking at the meeting with the tower might be easily and elegantly designed, with the effect that it would be spontaneously accepted as a speaking symbol of an arch beneath. "Like all Wren's steeples," says Fergusson, "that of Bow Church stands well on the ground; for he was never guilty of the absurdity of placing his spires astride on the portico or thrusting them through the roof." The observation is most appropriate, and we well know the architectural hybrids on which it designedly reflects: but the criticism might be understood as not unfairly glancing to strike even the management of the spire of Salisbury, which, to all appearance, thrusts itself up through the roof, and no otherwise than if it were intended to contradict the suggestion that it must needs be perforated by wide-spaced and lofty openings below. It was in obedience to a true feeling for organic combination that the Mediæval architects resolved to bring the lofty and slender campanile into intimate union with the cathedral; the aspiring character of Gothic, of Pointed architecture, lent itself to the adventurous enterprise, if it did not invite it in the first instance. When western towers were applied, there was scarcely an opportunity for the incongruous to intrude; but it is much if we can say that the last success was ever achieved in designing the noblest feature of all, the tower and spire over the crossing, in such a manner as to effect the combination without "uncouthness." It is something, no doubt, that at the re-entering angles of nave and transepts we may usually follow the continued vertical line of the angle of the central tower, and are thus put in possession of its relation to ultimate foundation,—a relation which is somewhat too much masked in the case of the dome of St. Paul's; but still we are ever left, and perhaps on this account the more, to correct, by appeal to memory or the logic of common sense, the mistake which the architectural language, on which we have a right to rely, would lead us into, that the tower below the cathedral roof was unpierced to the foundation.

It is rather hard to be driven to even seem to carp at any drawback to the perfection of noble buildings which inspire such genuine admiration, such pure and elevating enjoyment, and which it must ever be a worthy endeavour of architectural genius to emulate and rival;

> "But let us ponder boldly; 'tis a base
> Abandonment of reason to desert
> Our right of thought;"

and it will be ill for the world,—as ill architecturally as morally,—when the lapses and negligences and shortcomings of Mediæval or of other genius,—and such are the liabilities of genius, however lofty,—shall be allowed without question as equal in authority to whatever examples it has set of what at once was bravest and best. But, perhaps, after all, we moderns shall betray less poverty of spirit in a bigoted repugnance to recognising a mistake made by the Mediævals than in considering it necessary to seek an apology for our own most worthy originality in a Mediæval precedent. What is to be the limit of slavish imitation,—*servile* does not duly translate the *servum pecus* of Horace,—if we are to adopt our forefathers' sins without any hesitation whatever,—with alacrity,—but hesitate, shivering, on the brink of a virtue until we can be quite sure that there is no meritorious originality in the venture, and that we have been certainly forestalled in an example of courageous conscientiousness? By the merest coincidence an illustration offers itself to us in the recently-published Lectures of Sir Gilbert Scott. It occurs in his remarks on Wren's "certainly rather complicated" expedient of providing a cone of brickwork intermediate between his inner and outer domes of St. Paul's to carry the lantern. The principle, he observes, had been acted upon ages before at St. Mark's at Venice, though there, indeed, not only the external dome, but the lantern with its supports are all of timber. He proceeds,—"*With this Mediæval precedent before us I hardly think we need be so squeamish* about the expedient being artificial. We constantly find double coverings to our ancient churches, the vault to be seen within and the roof without," &c. "I almost defy an architect now designing a dome and experiencing these two difficulties:—(1) The artistic difficulty of making the same dome look well from within and without; and (2) the constructive difficulty of balancing a steeple on the top of his dome,—to resist the temptation presented by this simple expedient; and *the more so when conscious of having for it a Mediæval precedent.*"

Now, if an architectural purpose is admittedly worthy,—if an expedient which is effective and simple is further admitted to be the only expedient hitherto contrived or imaginable that will be effective, it is hard, indeed, if a modern architect must be liable to qualms of conscience unless he can quiet them by the anodyne of a precedent, though it may be no nearer to his own conception than the architecture of St. Mark's is to Early Decorated, or a framework of timber to a brickwork cone.

Considering how vast an accumulation of architectural examples and precedents the world is now provided with, and with which students must be and cannot help being acquainted, it will be sometimes as difficult for the most inventive to distinguish between original conceptions and merely revived recollections, as for the non-inventive to keep their hands from picking,—we had almost said, and stealing,—materials which, with a little spoiling,—to borrow a jest which Sheridan himself stole, but took care not to spoil,—will pass for their own. The more need is there that the fullest play should be given to that faculty of fusing and recasting the ancient materials that must and will be employed, into forms and arrangements which are truly in harmony with modern environment. The world is now assisting, in the French sense, at a revival of the style, or at least the manner, that it seems is to be called Jacobean. The enthusiasm for the secular employment of Gothic is declared to be dying out, and by the time we have before us the completed display of some of its most extensive efforts, may well be counted on as dead. Let us hope that its successor, however long or short its reign, will not insist upon inflicting, on a too long-suffering generation, every variety of inconvenience and uncouthness that was inflicted upon any of our ungracefully and ill-lodged ancestors a century or two ago.

Proposed Metropolitan Medical Association.—It is being urged by some well-known men that the formation of provident dispensaries in various parts of London, as a means of bringing immediate medical relief within the reach of all classes, and easing the overburthened hospitals, is highly desirable, and that a general conference of all interested in the question should be called at an early date to consider the expediency of establishing, on a broad and comprehensive basis, a central association for the promotion and encouragement of the provident medical system throughout the metropolis. A conference will be held at the Cannon-street Hotel, on this Saturday, the 21st of June.

YORK HOUSE, STRAND.

THE proposed removal of the water-gate of York House by the Metropolitan Board of Works having directed attention to this last relic of an historic house, it may be interesting to put together a few notes on the gate and the mansion to which it was formerly attached.

The site bounded on the north by the Strand, on the east by George-street, and on the west by Villiers-street, was anciently occupied by an inn or palace originally belonging to the Bishops of Norwich, which was exchanged in 1535 for the Abbey of St. Bennett Holme, in Norfolk, and became the property of Charles Brandon, Duke of Suffolk, who married the sister of Henry VIII. In the reign of Mary it was purchased by the Archbishop of York, and called York House, which name it appears to have subsequently retained. The Archbishops of York do not seem to have kept possession of the house for any length of time; for in the reign of Elizabeth it had reverted to the Crown, who let it to Lord Chancellor Egerton, and afterwards to the Lord Keeper, Sir Nicholas Bacon, who doubtless "led the brawls" here in the manner with which we are familiar through Gray's description.

Shortly after Bacon took up his abode in York House, his son, Francis, the illustrious Lord Verulam, was born on the 22nd of January, 1561, and passed here his infancy and childhood. In after years Bacon resided principally at Gray's Inn, but he still retained York House, and celebrated here the sixtieth anniversary of his birth, in company with his friends. In the same year (1621) he was created Viscount St. Albans, and published his "Novum Organum." He had then reached the summit of his ambition, but from this time his glory set for ever. Shortly after that joyous celebration at York House he was stripped of his offices, disqualified for the public service, banished beyond the precincts of the Court, subjected to a fine of 40,000*l*., and to imprisonment in the Tower during the king's pleasure. He was released from the Tower after a short detention there, but he does not appear to have returned to York House, although he had a great desire so to do, where, as he alleges, in a petition dated from Gorhambury, he could have "company, physicians, conference with my creditors and friends about my debts, and the necessities of my estate, helps for my studies, and the writings I have in hand. . . . . It is the house," he concludes, "wherein my father died, and wherein I first breathed, and where will I yield up my breath, if so please God, and the king will give me leave, though I be now by fortune (as the proverb is) like a bear in a monk's hood. At least, no money, no value, shall make me part with it." The royal favourite Buckingham had cast a longing eye upon York House, and its great owner was no more to possess it. "If York House," says Sir Edward Sackville, in a letter to Bacon, "were gone, the town were yours, and all your straitest shackles cleared off, beside more comfort than the city air only. . . . . If you part not speedily with it you may defer the good which is approaching near you, and disappointing other aims (which must shortly receive content, or never), perhaps now yield matter of discontent, although you may indeed be as innocent as before." In spite of this, and other friendly warnings, Bacon refused to part with his birthright, and in May, 1624, an Act of Parliament was passed, by which York House, and the estate adjoining, were "assured" to the king, by whom they were granted to Buckingham.

Buckingham is said to have rebuilt York House in a magnificent style from the designs of Inigo Jones; but of this there is no direct evidence. In the Fauntleroy Pennant in the Soane Museum is a drawing of the house, showing the water-gate, with three gables behind, similar in character to those shown on the drawing by Van den Wyngrerde (1543) in the Bodleian Library. It is true that contemporary drawings are not always to be relied upon; but it is difficult to suppose, if the drawing in the Fauntleroy Pennant be authentic, that the draughtsman should have inserted a background that did not exist in the time the drawing was made.

The water-gate, until quite recently, has always been ascribed to Inigo Jones, and has been greatly admired for its bold conception and justness of proportion. James Ralph, who was not by any means a partial critic, says of it:—

"York stairs is unquestionably the most perfect piece of building, that does honour to the name of Inigo Jones,—it is planned in so exquisite a taste, formed of such proper and elegant decorations, that nothing can be censured or added. 'Tis at once happy in its situation beyond comparison, and fancied in a style exactly suited to that situation. The rockwork or rustick can never be better introduced than in buildings by the side of the water; and, indeed, 'tis a great question with me whether it ought to be made use of anywhere else."*

Campbell (Vitruvius Britannicus) says, "This gate was erected by the first Duke of Buckingham when Lord High Admiral of England, A.D. 1626, by Inigo Jones," and Batty Langley, in his "Ancient Masonry" (1734), has an illustration of "the Tuscan order by Inigo Jones at York Stairs" in p. 219.

In 1854 Mr. George Bailey, the then curator of the Soane Museum, published in the *Builder* (vol. xii., p. 252) an extract from a MS. account-book formerly belonging to Nicholas Stone, preserved in that museum, in which it is stated that the water-gate at York House was designed and built by Nicholas Stone. In a note communicated to the same journal in 1864 by Mr. Wyatt Papworth (vol. xxii., p. 450) allusion is made to this discovery, and the inference is drawn that we have in it circumstantial evidence that Inigo Jones should no longer have the credit of the design.

A careful examination of the two MS. books formerly belonging to Stone in the Soane Museum reveals the fact that the evidence that Stone designed as well as built York Gate rests not, as might be supposed, upon the handwriting of Stone himself, but upon the testimony of Charles Stoakes, Stone's nephew, who, in a catalogue of "Some of y^e^ most eminentt Works that my uncle, Mr. Nicholas Stone, Senior, did in England, in Holland, and in Scottland," prefacing the account-book, enumerates among other things, "The Water Gate att Yorke House hee desined and built and y^e^ Right-hand Lion hee did fronting y^e^ Thames. Mr. Kearns, a Jarman [*i.e.*, a relation, from *Germanus*, Lat.], by maring [marrying] his Sister, did y^e^ Shee Lion."

It appears that Stone acted as architect, if we credit a subsequent entry in the same book, that "he desined Cornbury House in Oxford Shere hee w^nt^ 33 jorneyes for wh^ch^ y^e^ Lord Cornbury gave him 1,000*l*. well paid." This was a large sum in those days, and was in all probability about the equivalent to the usual architect's commission. Devonshire House, Piccadilly, which was destroyed by fire in 1733, was rebuilt by Kent at a cost of 20,000*l*., exclusive of a sum of 1,000*l*. presented to the architect by the duke.†

It is significant, however, that, although the credit of the design of York Gate is claimed by Stoakes for his uncle, no mention is made in the MS. account-books of the circumstance, although there are very minute entries of all transactions entered into by Stone between the years 1630 and 1641. It is, of course, possible that Stone designed the gate between the year 1626 (when York House came into the hands of Buckingham) and the year 1630, when the MS. entries in the account-book commence, but it is remarkable that a man who was so precise as Stone was, judging from the minute details of his accounts, should not have left any memorandum of a work so important as the additions to York House must undoubtedly have been. If Jones rebuilt York House it is inconceivable that he should have left such a picturesque feature as the water-gate to be designed and built by the master-mason who was at that time carrying out his design for the Banqueting House at Whitehall. The probability is that Jones was not so employed, and assuming this we have to overcome the difficulty that the design of the gate has always been attributed to him, and was never questioned until the discovery of the Stoakes memorandum a few years ago. Stoakes's catalogue of his uncle's works is only to be relied upon in so far as it is corroborated by other evidence. Thus he includes in the list of works his uncle "did," as he calls it, the Banqueting-room at Whitehall, the Chapel at St. James's House, and the Stairs and Water Gate at Somerset House, all of which we know to be Inigo Jones's designs, although carried out by Stone.

The large sum received for Cornbury House is somewhat of a stumbling-block, but there seems no reason to believe that the water-gate is not Jones's design, and that it was carried out by Stone in the same manner as the designs for Whitehall and elsewhere. The stone gateway on the east side of Holland House, Kensington, is attributed to Inigo Jones, and was carved by Nicholas Stone, who appears to have been the Forsyth of his day. He was almost exclusively occupied in the designing and setting up of sepulchral monuments, of which he executed a very large number in his time, and although he may have occasionally acted as architect by the desire of a patron, there is no ground for supposing that he practised habitually as an architect, or that he was capable of producing such an unmistakable masterpiece as the water-gate of York House, which bears the stamp of Inigo Jones's heavy hand and marked Palladian proclivities. The arrangement of the plan is remarkable, and the mouldings agree with the few examples of Inigo Jones's works extant in London.

Leigh Hunt in "The Town: its Memorable Characters and Events," remarks,—"The reader who should go down Buckingham-street, and contemplate the spot which Inigo Jones and the trees have beautified, will not fail to be struck with the many different spirits that have passed through this spot,—the romantic Suffolk; the correct Egerton; the earth-moving Bacon; the first Buckingham, with a spirit equal to his fortunes; the second, witty, but selfish, who lavished them away; and all the visitors, of so many different qualities, which these men must have had, crowding or calmly moving to the gate across the water, in quiet or in jollity, clients, philosophers, poets, courtiers, mistresses, gallant masques, the romance of Charles I.'s reign, and the gaudy revelry of Charles II. A little spot remains, with a few trees, and a graceful piece of art, and the river flowing as calmly as meditation."

At York House Buckingham lived until his assassination by Felton, when it became the property of his more notorious son. It was then leased to the Earl of Northumberland, whose son, Algernon, had not yet married the heiress of Suffolk, and received with her the magnificent town-house known as Northumberland House, together with its furniture, pictures, &c., for the annual rent of 350*l*. Under the Protectorate the house was apparently considered public property, and was bestowed on Fairfax as a reward for his services to the Parliamentary cause. The heiress of that nobleman married the Duke of Buckingham, who was extravagant enough to maintain two town-houses within a few yards of each other, and York House thus reverted to its former owners. Towards the close of his life, the duke being in embarrassed circumstances, sold the site of York House for building purposes, and the ground was intersected by streets, and assumed the aspect in which we now see it. Of-alley has disappeared, but George-street, Villiers-street, Duke-street, and Buckingham-street remain to this day, and, with the water-gate, are the sole relics to remind one of the former splendours of the place.

* Critical Review of the Public Buildings of London, p. 40, edition 1734.

† Cunningham's "Handbook of London," p. 12.

FROM THE BANKS OF THE SEINE.

IT is not without some degree of reason that the French pride themselves on their power of perfecting those ideas and inventions that reach them from abroad. The instructive value of the recently-organised exhibition of drawings by the old masters has been enhanced by the addition of an excellent feature which we in England would do well to imitate, and which could not fail to please a great many people. MM. Dreyfus and Ephrussi, the active organisers of the exhibition at the Beaux Arts, in connexion with the "Société des Promenades artistiques et scientifiques," founded some two years ago, invited, not long since, M. Philippe Burty, the well-known art-critic, to deliver a peripatetic lecture on the drawings by the French masters. Thanks to the electric light, the exhibition of old masters is open every night till eleven o'clock, and on the evening in question more than 400 guests were present at M. Burty's lecture, such was the success of which that another discourse on the Italian masters is shortly to take place. It can scarcely be expected that, within the limit of a paragraph, M. Burty's able comments can be resumed. From the early illuminators of the fifteenth century down to Prud'hon, the lecturer passed, supplying a mass of amusing information and

anecdote in the lives and processes of each. But the remarks on the artists of the last century were received with the most attention and favour, especially when M. Burty spoke of Watteau, Boucher, and Lancret, held in such discredit a generation since; then, Boucher was looked upon as little else than a *polisson*, and Watteau's famous "Voyage à Cythère" was consigned to a corner of the École des Beaux Arts, where it served as a target for the bread pills of the pupils. Now, however, the public taste (shall we say fashion?) has changed; the slightest sketch or engraved vignette, by a French master of the last century, is paid for at an exaggerated sum; but whether M. Burty is right or wrong in not hesitating to state that Boucher in his style was as great a decorator as Raffaelle, we are not about to discuss. We have chiefly mentioned the success of this peripatetic lecture of M. Burty among the old masters, in order to draw attention to an excellent idea that might, with no small degree of profit, be carried out in our own Burlington House or Grosvenor Gallery Winter Exhibitions. We cannot think, indeed, that such an eminently practical innovation will be lost upon promoters of artistic study.

While speaking of the eighteenth century, many connoisseurs in England will be grieved to hear of the death of a well-known print collector, M. Mahérault, at the age of eighty-four. During the greater part of this long period M. Mahérault has stocked his well-arranged folios with numerous original drawings of the eighteenth-century French masters, and doubtless the Hôtel Drouot will shortly announce, for next season, the sale of the late collector's treasures, among which are known to exist some choice Fragonards, Gravelots, Marilliers, Cochins, Bouchers, Prud'hons, and Moreau le Jeune, of which latter artist M. Mahérault was the pupil.

Thanks to the energy of the Commission for the Formation of an Inventory of the Artistic Treasures of France, founded, it will be remembered, some time since, there is every possibility that the contents of the smallest collections scattered throughout the country will be made known to the Commission. Already the work has produced excellent results. The labours of many of the numerous local artistic and archæological societies have been regulated on a uniform method, and by their aid are being rapidly registered scrupulously all the historical artistic treasures which France possesses, and, so to speak, are thus kept the minutes of all the acquisitions of the past and the present. The volumes of the catalogue already published are, it may be mentioned, liberally sent to all public libraries who apply to the proper authorities, and in this manner the knowledge of the system pursued is propagated far and wide. Is it not time, we would ask, that England should complete a similar catalogue? Is it, we wonder, owing to this energetic campaign that a number of the warehoused treasures of the Louvre are to be shortly displayed? Certain it is that, as was the case a few years since in our National Gallery, the cellars of the Louvre contain many interesting works hidden away from the public gaze. To those familiar with the grand old palace, it is known that various deserted halls at present encumbered with easels and canvasses, are scattered about in more than one direction. Report speaks of the till now sacredly closed *Salle des États* as the future show-room: let us hope so, for from the hasty glance that we have had of this hall, we prophesy that its noble proportions, together with its historic interest, and the treasures it will contain, will render it the most popular annexe of the great collection of the Louvre.

While speaking of the treasures of the French museums, it is worthy of remark that M. Turquet, the Under-Secretary of State to the Minister of Fine Arts, has commissioned a number of artists to reproduce in etching most of the famous pictures of the museums. If these etchings are faithfully executed, and with the power of which the etching-needle as an interpreter of artistic thought is capable, we shall have placed within our reach a valuable addition to our portfolios; but we fear that patronage by the State is likely to interfere with rather than promote the object.

The French papers are now filled with interesting accounts of the Literary Congress at London, and it would be ungracious not to thank M. Pagès of the *National* for the graphic and amusing letters he sends home from the banks of the Thames. In one of these the banquet at the Mansion House was most carefully sketched, but the writer's curiosity was much roused by the so-called "Egyptian Hall." "I do not know why it is so named," he remarks, "for I saw in it nothing Egyptian, except—M. Ferdinand de Lesseps." More than one visitor to the Mansion House has been puzzled by this matter also, but readers of the *Builder* have been told before now that the Egyptian Hall was so called because in its proportions it was made to correspond with the Egyptian Hall described by Vitruvius.

The mention of Vitruvius brings us to the meeting of the seventh session of the Architectural Congress on the 16th inst.; the programme comprising visits to the Municipal Apprentices' School at La Villette; the national manufacture at Sèvres; the Municipal College, Chaptal; and a number of lectures by MM. Hemard, Sedile, Achille Lucas, Hermant, Charles Lucas (the secretary of the Commission), Trelat, and Ravaisson. The congress, by the time this is published, will be drawing to a close, and on Saturday, the 21st, will conclude by the distribution of the medals and a dinner at the Grand Hôtel.

THE RIGHT TO AIR.

IN Mr. Banister Fletcher's recently-published little book on "Light and Air,"* a handy work which we may say, *en passant*, is clearly and concisely written, but which would be more valuable if references were given to the legal decisions quoted in it, the writer points out that some persons consider that there can be no claim for air as distinguished from light. That is to say, that a house-owner cannot bring an action against his neighbour for preventing the flow of air to his house, whilst he has a legal remedy if the light which enters by his windows is obstructed. Mr. Fletcher, however, basing his opinion upon a paper read by Mr. Locock Webb, Q.C., before the Institute of British Architects, seems to consider that there does exist a cause of action for the obstruction of air; at least, this is the conclusion which we draw from this somewhat ambiguous sentence (p. 8), "it will therefore be apparent that the surveyor must not lose sight of the question of air." But since this question of the obstruction of the air of a building is one of such considerable importance, we may fairly give a short space to its discussion, having in view the case of Bryant *v.* Lefevre, recently decided by the Court of Appeal, which is reported in the current numbers of the several law reports (4 L. R., C. P. D., App., p. 172; 48 L. J., C. P. D., App., 380).

We may shortly say, then, that in our judgment, considering the several legal decisions which have to do with this point, a man has no legal right to the air apart from the light. This may seem to many a startling proposition, especially as the air may be considered a more vital element than the light, but that this is the present state of the law we have really very little doubt. Taking the last case, that of Bryant *v.* Lefevre, we find the following sentence in Lord Justice Cotton's judgment:—"Cases to prevent or to claim damages for interference with ancient lights are frequently spoken of as cases of light and air, and the right relied on as a right to the access of light and air. But this is inaccurate. The cases, as a rule, relate solely to the interference with the access of light, and in no case has any injunction been granted to restrain interference with the access of air." Now this is about as definite an expression of opinion from an able judge, and a judge of the Court of Appeal, as it is possible to find, and after it we must receive very overwhelming proofs that the proposition which we have laid down is incorrect before we can consider the law to be otherwise than we have stated. The facts in Bryant *v.* Lefevre were very simple, and they must be noticed as affording examples of the legal doctrine. The plaintiff set out that for more than twenty years before the circumstances complained of he had always had a free access of air to his chimneys, which were on the side of his house next to the building of the defendants, and that about the month of June, 1876, the defendants raised the walls of their house so high, and put stacks of timber on the roof of it, so as to interfere with and prevent the free access of air to the plaintiff's chimneys. Thus a proper draught was prevented, the plaintiff could not fully use his chimneys, and the house was in consequence lessened in value. But on the statement of facts the Court of Appeal came to the conclusion that the plaintiff could not recover any damages, because, though he had a right to the air, yet it was a right subject to the right of adjoining owners to use their property in the various ways in which property is commonly and lawfully used. In other words, Mr. Bryant had no indefeasible right to have the air permitted full access to his house, as he would have in the case of light if by the loss of such light he would have been substantially injured. And in such a case the legal presumption of a lost grant cannot arise, because there can be no possibility of preventing the right from arising, as can be done in the case of a right of way by stopping it up. Therefore this last case seems to put any doubt at rest in regard to the right to air. But it does not stand alone, because, in the year 1863, the case of Webb *v.* Bird was decided by the Court of Common Pleas, and on appeal by the Exchequer Chamber (10 C. B., N. S., 268; 13 C. B., N. S., 841). In that instance Mr. Webb was the owner of a windmill, which had been built in 1829, and in 1861 a school-house had been erected twenty-five yards off, by which the current of air from that quarter was prevented from reaching the mill, and consequently its value was lessened. Here, again, the Court were of opinion that no right to the air existed. The Prescription Act, 2 & 3 Will. IV., c. 72, s. 2, did not apply, and s. 3 of the same statute by expressly naming light tacitly excluded air. A lost grant could not be presumed, there was no common law right to the air, and so the plaintiff could have no right of action at all against the person who built the school-house. Then, further, two cases, which were decided in Mediæval times, were shown by the judgment to have no weight, so that we now have not only this case of Webb *v.* Bird, but the even more important one of Bryant *v.* Lefevre, having regard to the increase of building operations.

But there is another case to which we must refer, because it still further elucidates the principle involved. It is the case of Dent *v.* The Auction Mart Company, 2 L. R., Eq., 238, decided in 1866 by Lord Hatherley, then Vice-chancellor Wood. The observation in the judgment to which we wish to draw attention is as follows:—(p. 252) "Another part of the case is this: there is a staircase lighted in a certain manner by windows which, when opened, admit air. The defendants are about to shut up these windows, as in a box with a lid off, by a wall about 8 ft. or 9 ft. distant and some 45 ft. high, and in that circumscribed place they propose to put three water-closets. There are difficulties about the case of air as distinguished from that of light; but the Court has interfered to prevent the total obstruction of all circulation of air; and the introduction of three water-closets into a confined space of this description is, I think, an interference with air which this Court will recognise on the ground of nuisance. This is perhaps the proper ground on which to place the interference of the Court, although in decrees the words light and air are often inserted together as if the things went *pari passu*." Therefore, this judgment, though not delivered in such precise terms as that of Lord Justice Cotton, to which we have already alluded, comes in substance to the same thing, that it is incorrect to suppose that the right to light and the right to air rest on the same foundation, and that persons have equal rights to both these elements. Without the confirmation of the judgment in Bryant *v.* Lefevre one might have some doubt whether to place complete reliance on the dictum of Lord Hatherley, but coupling them together, and adding also the decision in the Windmill case, it seems to be obvious that a house-owner has no right to air alone. And it should be further pointed out that in Dent *v.* The Auction Mart Company the main ground of action was the prevention of light, and that the question of air was a wholly subsidiary one.

But it is necessary to point out that this general rule, which at present seems to us to be clearly settled, may have an exception if there is an express grant or covenant not to interfere with the passage of air over neighbouring property, which may be enforced against the grantor or covenantor or against his assigns with notice. Moreover, there is also a subsidiary point which may yet prove another exception: that is, when there has been an uninterrupted flow of air through a definite aperture over a neighbour's property. After Lord Hatherley's judgment, this even seems to be questionable,

* Light and Air: a Text-book for Architects and Surveyors. By Banister Fletcher. London: B. T. Batsford. 1879.

but it may yet prove a point of some importance in relation to the ventilation of manufactories or workshops. Having, therefore, regard to these decisions, and to others subsidiary to them, which we have not touched upon, it is clear that any longer to speak of rights to light and air, actions for obstructing light and air, and so forth, coupling these two elements, as has hitherto been done by lawyers, architects, and builders, is not only inaccurate, but is an inaccuracy which should not continue, because it is misleading. Loose forms of speech are often convenient and harmless, but when they convey impressions which are not only wrong, but may create injurious consequences, the sooner precision in respect to such points arises in language the better will it be for all parties concerned. Before this last case of Bryant *v.* Lefevre, it was perhaps not unreasonable to keep up a phraseology which gave expression to an opinion very generally current. But after reading the judgment of the Court of Appeal, and comparing it with the preceding cases, there can be no doubt that we must cease to consider rights to light and air as one and the same thing. Fortunately, where buildings interfere with air they will, in cities at least, usually substantially diminish the amount of light, so that, in many instances, the protection of the right to light will equally be a protection to the approach of the air. But in all cases in which persons seek to obtain compensation for a deprivation of the full flow of air, it is obvious that they will obtain no aid from the latest decisions to be found in the reports of our law courts.

CHARLES BLANC ON THE OLD MASTERS.

THE series of drawings by the old masters now exhibited at the Paris École des Beaux Arts, and which has been reviewed in these columns, has called forth much criticism from Frenchmen who are considered by the public, or by themselves, to be authoritative art-critics. Prominent among those whose claims are beyond dispute is M. Charles Blanc, who has written an essay on the value of the series now put under the public eye, from an educational point of view. We shall not attempt to reproduce the essay, but we may fairly give a summary of this critic's ideas on the characteristics of the exhibition. He selects for special notice the works of Leonardo da Vinci, Michelangelo, Raffaelle, and Prud'hon; and in opening his review, he is emphatic respecting the advantages to the student to be derived from a conscientious examination of the six hundred and seventy-one drawings now placed within the range of their observations. When the student has before him, says M. Blanc, the figure of a woman in the attitude of imploring, such as that, for example, attributed to the pencil of Filippo Lippi, he recognises that the hands sketched from memory have more refinement of shape than those drawn from nature, the reason being that memory always idealises, and omits details that are not essentially characteristic. Nature gives a charm to the human face by particularising; memory gives it a certain style and dignity, by idealising. It is exceedingly curious to note, in examining these drawings, how nature makes one or two attempts before bringing forth a commanding genius. Before producing Leonardo da Vinci she tried her 'prentice hand at Verrochio; before producing Michelangelo she made a rough sketch, as it were, in Orcagna, and then in Luca Signorelli.

Although Leonardo da Vinci's work bears some traces of his precursors, he is one of the greatest of masters. He does not speak with a mere Tuscan accent,—his is the universal language which will be understood in all countries and in all times, as will the work of Buonarotti and of Raffaelle. That which is specially Florentine in Da Vinci is the grace, the lightness, the ease of his style. He was always meditating over his work; his long study of Nature had led him to implant it in his imagination; and while he was talking to his friends or pupils he was always sketching groups of armed soldiers, warriors on horseback preparing for combat, or leading an attack; and often on the same sheet of paper he would indicate a woman's smile, or the rounded limbs of an infant, or a machine of his own invention, or a caricature. His project for his picture of the "Adoration of the Magi," which remains unfinished at Florence, is exceedingly interesting; one can watch the gradual growth upon paper of the scheme of the picture; one can trace each figure, and see how carefully they are followed out. All the changes wrought by the Renaissance are exemplified by Leonardo da Vinci. He invented the poetry of shade, the *chiaroscuro* of the general effect; he can see the changes that painting will undergo in the search for effect, and he paves the way for it. There are in the École des Beaux Arts now three studies of one theme, "Victor placing a Buckler on a Trophy." One of these sketches of Victory is powerfully shaded, and the effect is that of a suddenly acquired gift of giving expression on the part of the artist. In this heroic sketch, Leonardo da Vinci proclaims the eloquence of shadows: he anticipates Correggio; he prophesies Rembrandt; he announces, three centuries beforehand, the coming of Prud'hon.

M. Blanc is evidently an enthusiast on this subject, and he branches off here into an account of two happy hours he spent at Windsor, when the Queen's librarian showed him the portfolios (and allowed him to look over them) containing a number of drawings by Leonardo da Vinci and Michelangelo. He felt, he says, that he was in the presence of the two great men of genius in art. One had probed the deepest secrets of nature, the other had created for himself a special nature borne to a height that was inaccessible to the vulgar mind. Leonardo's drawings represented human physiology with a scientific skill that was incomprehensible in an artist. There were touches in his drawings of human figures like those used by the architect to indicate the workings of the construction, the thickness of certain points, the solidity of this, the adjustment of the other. The human form divine was drawn with that scientific exactitude that is, in itself, an art. Michelangelo's sketches produced an effect of a different kind. The librarian showed M. Blanc, one by one, the drawings that had been made as studies of a *Resurrection*, and these drawings strongly resembled, says M. Blanc, those that Mr. Malcolm has been kind enough to lend, and that are now in the exhibition at the École des Beaux Arts. The Saviour is no longer a god rising from his grave like a phantom draped in a shroud. He is an athletic hero, a Hercules, who has been buried during his sleep, and who wakes up in violent indignation, pushing back the stone from the sepulchre with a blow of his shoulder. "The Fall of Phaëton," of which there is a specimen in Paris, sent from Mr. Malcolm's collection, greatly pleased M. Blanc, and calls forth a remark from him that Michelangelo makes more effect with a pen than with a pencil. In Michelangelo's hand the pen is invaluable,—it defines the outlines and accentuates them, it hollows out the thinnesses of flesh, it veils the nude by defining the muscles, the bones, the tendons. Michelangelo was the precursor of the engraver. M. Blanc is of opinion that Michelangelo's drawings put those of all other artists, with the exception of Leonardo da Vinci, into the shade. Even Raffaelle, he thinks, is weakened by comparison with so terrible a master. And yet Raffaelle's drawings are exquisite, and when one has recovered from the violent impression left by the perusal of the writings of the painter of the Sistine Chapel, it is clear that Raffaelle was the offspring of a luminous and sovereign eclecticism. He was the *resumé* of the Italian Renaissance, and if anything be wanting in him it is "the charm of a single fault." In his care to exaggerate nothing he has hit upon a perfection of style that is at first chilling in its effect, and the delights of which only reach the mind after long study. Luca Signorelli was a Michelangelo in the rough; Raffaelle is a Michelangelo softened, humanised, excellent in all points, discreet in abundance, measured in grandeur, temperate in poetic idea.

Says Charles Blanc, in concluding his pleasant essay, of which we have given the prominent points,—"A gallery of such drawings is worth a museum full of paintings to the historian of art and æsthetics. The Spanish school in its gloomy realism is thoroughly represented by the drawings of Velasquez, of Zurbaran, of Goya; and the museums of Berlin, of Nuremberg, of Munich, of Vienna, could not give a better idea of German art than do the drawings of Dürer, of Balding, of Beham, of Holbein. Colour could add little to the artistic worth of these portraits, which seem to be like masterpieces of Da Vinci's transplanted to Germany. Then there are the inimitable drawings of Rubens, of Vandyck, of Teniers, of Adrian Ostade, of Rembrandt. Rembrandt is a poet in his paintings. He refines and improves and gives interest to everything he touches. That which others would render absurd he renders sublime." Turning to the French school, M. Blanc says emphatically that Prud'hon, Ingres, and Poussin are the only artists whose drawings can be mentioned in the same breath with those of all the great Florentine masters, and he gives Prud'hon the place of honour among the three, commending especially Prud'hon's lightness and grace, by which the severity of Minerva is softened, the sternness of Justice modified. The outlines of his drawings are vague: the eye perceives only the roundness of the figures he draws, the exquisite grace of the attitudes, the beauty of the faces. M. Blanc has seen no more lovely faces in the whole range of his artistic experience than the faces of the Bacchantes who are plucking grapes in company with Cupids and Fauns, as rendered by M. Prud'hon.

And with this tribute to his countryman M. Blanc brings his observations to a close.

THE NEW CANAL.

WITH the successful completion of the once-reputed impossible Suez Canal still a matter of but yesterday; with the proposal for the opening up of the great African Continent at present under serious consideration; there is every evidence that the nineteenth century, before its close, will mark its passage by the solution of one more great engineering problem, the piercing of the Isthmus of Panama.

Already the subject of innumerable scientific discussions, of serious doubts, but at all times admitted to be of almost imperative necessity, the bold proposal to separate the two Americas and unite the huge basins of the Pacific and the Atlantic Oceans, has at length been brought under practical discussion.

On the 15th of last May the International Congress for the Study of the Inter-oceanic Canal held its first meeting at Paris under the presidency of M. de Lesseps, at the Société de Géographie. England (in the persons of Sir John Stokes* and Sir John Hawkshaw), France, America, Holland, Switzerland, Italy, and several other countries, among these China,—strange to say, not Japan,—were ably represented, and on the various commissions might have been recognised more than one familiar name in the scientific world of the two hemispheres, united under the ever-energetic and earnest engineer of the Suez Canal, M. de Lesseps.

The two Americas, North and South, as a glance at the most elementary map will suffice to show, are connected by a narrow strip of land, the breadth of which at certain points barely exceeds thirty miles,—a narrow wall, which stands between and separates the two enormous oceans, the Atlantic and the Pacific. But narrow as is this strip of land, its existence obliges those ships which sail from Europe to the western coast of America, and inversely, to sail round the whole of South America by Cape Horn, and thus make a voyage of several months through extreme latitudes of heat and cold; in the same manner as the existence of the Isthmus of Suez formerly doubled the distance of India for our ships.

More than once the proposal has been made to pierce the Isthmus of Panama, of which a chain of mountains forms the backbone; but, insignificant as is their height, from their slopes flow, on one side to the Atlantic, on the other to the Pacific, rivers, the sources of which in more than one instance are so near to each other that the rumble of their falls may be heard at the same moment. A simple channel would suffice to unite them, and make the two great Americas two distinct islands; indeed, according to report, this channel has been already several times cut.

Between the Perico, an affluent of the San Juan, and the Raspadura, an affluent of the Atrato, the one a tributary of the Atlantic, the other of the Pacific, Don Raphaël-Antonio de Cereso and Don Francisco Sea dug one day, to mark out the properties they managed, a ditch, which in the rainy season was filled with a muddy stagnant liquid, which neither of the two basins can claim for itself alone. This is the *canal del prete*, by means of which, on more

* In the meeting of the French Academy of Sciences, on June 9th, Sir John Stokes was elected member of the section of Physics by forty-four votes to four given to Professor Tyndall.

than one occasion, canoes have been able to pass from one ocean to the other. In reality, therefore, the isthmus is already pierced, but the means by which even a canoe can barely pass is hardly open to the commerce of the world.

It has often been asserted that the isthmus is traversed by depressions the altitude of which scarcely exceeds some ten yards or so above the level of the sea. But now this statement is proved to be in no way founded on fact. Numerous studies on the geology and topography of Central America have been commenced, and the country is well known; and it was from this circumstance that seven projects were laid before the International Congress for their consideration. Some proposed a simple canal, others a canal with a system of locks: the latter proposal being soon set aside. For the simple canal, two further questions had to be decided,—whether the canal should be open, or should pass through a tunnel. From the first, it was evident that the former system met with most favour, though its expense was enormous, augmenting by some five millions sterling the cost of the proposed route, traversing the State of Panama, from the Bay of Limon, on the Atlantic, to the roadstead of Panama,—the project which in 1878 was studied by an international commission. This is the project which has been accepted by the Congress, notwithstanding the efforts made by the Americans for the more costly, and to them more advantageous, route known under the name of the Nicaragua project, in which the canal would cut from San Juan del Norte, or Greytown, on the Atlantic, to the Creek of Brito, in the Pacific, traversing the Lake Nicaragua,—a route which would traverse an unhealthy district, one also disturbed by continual political difficulties, and the expense of which would be some twenty-one millions sterling, with a yearly expenditure of more than half a million.

The importance and necessity for this inter-oceanic canal have been patent for years, it may be said for centuries,—the Portugese in the sixteenth century dreamed of the canal,—to the scientific and commercial world; particularly to the latter when each year increases, by the action of free-trade and the facilities of transport, the carrying trade between the East and the West. We have to thank M. Levasseur, of the French Institute, for the masterly report he presented to the congress at its second meeting. In this remarkable document, shortly to be printed, many interesting particulars were laid before the congress. Thus we learn that in 1876 the trade of those regions which the canal would assist amounted to some fifty-two millions sterling, to which another twenty millions must be added as representing the value of the traffic of the extreme Asiatic East with the United States; in all, therefore, some seventy-two millions' worth of merchandise which would have passed through the canal had it existed. But it is important to learn the amount of tonnage which this traffic represents, as it is on the tonnage that the administration of the future canal will charge and therefore gain. By a series of calculations, M. Levasseur has arrived at the figure of some 4,830,000 tons, and as to this must be added the tonnage of the guano vessels which generally sail to America in ballast, the round sum of 5,000,000 tons may be taken as representing the cube of the merchandise which would be transported by the canal. As it is an established rule that in the course of ten years the general commerce of the world will increase by about 50 per cent. at the least, it may be said that by the time when the canal is completed (we have M. de Lesseps's word for it that this will be in eight years' time) the tonnage of the vessels will rise to some seven millions and a quarter.

The excellent report read by M. Chanel at the same meeting was little but a continuation of M. Levasseur's calculations. In it the financial question was treated. The probable receipts of the canal and its expenses were considered, and the probable profit placed at some forty-two millions of francs (1,680,000*l.*).

Few facts are more clear than the figures placed before its readers by the *New York Herald* of some time since in the discussion of the necessity for the piercing of the Panama Isthmus, when we see the table of distances from New York to several of the great ports of the world by the Cape of Good Hope route, by the Cape Horn route, and by the Isthmus of Panama. From New York to Calcutta by the first of these, the distance is some 17,500 miles; by the second, 23,000; by Panama, 13,400; to San Francisco the distance is some 19,000 miles by the existing Cape Horn route; by Panama, this would be reduced to 5,000 miles.

Such figures as these are sufficient to prove the advantage of the new canal, and are as applicable to the great commercial routes of our English vessels as those of the United States.

The world still works and labours for the inevitable future, to which our century will hand down so many nobly completed enterprises.

SHAFTESBURY HOUSE, ALDERSGATE.

ALDERSGATE Ward was almost completely devastated by the Great Fire of 1666. One of the few buildings that survived that disastrous occurrence has been, since its erection, applied to a great variety of uses and occupations, the last adaptation being now completed; reference is made to Shaftesbury Hall, Aldersgate-street, built by Inigo Jones, and in early times one of the many palaces and residences of nobles and distinguished men that stood within the comparatively small area of what is now Aldersgate Ward. The house, built for the Tuftons, Earls of Thanet, was originally known as Thanet House. John, the second Earl, a descendant of the Toketons, feudal lords in Kent, was probably the first occupier. He died in 1654, and was succeeded by Nicholas, the third earl, who died 1679. These nobles paid heavy penalties for their attachment to the Royal cause; Earl John was mulcted in the sum of 9,000*l.* by the rebel Parliament, and Earl Nicholas was twice committed by Cromwell to the Tower, where he was incarcerated for two years. From the Thanets the house passed into the possession of the celebrated statesman and intriguer, Sir Anthony Ashley Cooper, who, although at one time a Parliamentarian, eventually assisted in the restoration of the monarchy, and as Baron Ashley, of Wimborne St. Giles, Dorset, 1661, founded the Shaftesbury peerage: in 1672 the title of Earl of Shaftesbury was conferred upon him, and in the same year he was made Lord High Chancellor of England. He was the author of the second great charter of freedom, the Habeas Corpus Act. He was also the champion of a Bill to make the judges independent of the Crown. He died in Holland, of gout in the stomach, in 1683. In the course of the two centuries that have transpired since the time of the first Earl of Shaftesbury, the house has had many occupiers, and has been applied to a variety of purposes. Although the buildings fronting the street remain, a large area behind has been cleared and made ready for some other use. Among the buildings removed was a large banqueting-hall, with adjacent rooms and appurtenances. Since it ceased to be an abode of nobles, Shaftesbury Hall has been in succession a tavern, a lying-in hospital for married women, a general dispensary, carriers' warehouses and offices, a middle-class school, and on the ground-floor to the street front, a number of shops and places of business of various kinds. The greater portion of the remaining buildings is now converted into a preaching-hall for the Wesleyan City Circuit, in connexion with which there are school and committee rooms, vestry, library, and other accommodation. The nature of the construction in partitions, floor levels, positions of the rooms in relation to each other, &c., imposed much difficulty in getting sufficient space and head-room for the hall and the organ. The hall consists of two long rooms, proportionately wide, opened by removal of partitions, that join at a right angle, where the minister and choir occupy a platform in sight of the whole congregation. Iron girders were put in to carry the organ, the longer pipes of which are taken through the ceiling and floor to a small room above. Straight pipes would have required that some of them should have pierced the roof of the upper rooms, and have discharged into the open air; this has been obviated by introducing knees in the longer pipes. The organ, which is of excellent tone, has fifty-six notes and seventeen stops; it has been reconstructed satisfactorily by Mr. Northcote, of Camden-town. The general work, in the adaptation of the premises to the new uses to which they are applied, has been executed by Mr. William Hawken, of New-cross. The street front of "Shaftesbury House" remains as it was designed by Inigo Jones, excepting that the cornice has been tampered with, and some unsightly dormers are introduced that are not in the illustration of the front given by Maitland, who pronounces it "a most delightfully fine edifice," and deplores that "the politeness of the town is so far removed hence, that it is hardly possible this fabric should be admired as it ought, or be kept in suitable repair." The new lessees have also rather disfigured the front by painting a part of it; the remainder, left grim and unwashed, contrasting strongly with the bright colour of the new paint, and destroying the continuity of the design.

The ward of Aldersgate has undergone remarkable changes since the beginning of the seventeenth century, and has been the theatre, during that time, of many notable historical and political events. In 1603 King James VI. of Scotland and I. of England, entered London by the Alders-gate, conjectured to have taken its name either from its relative antiquity, or from the alder-trees that grew in the locality. The gate was at that time on the confines of the northern suburb of the City, and was the entrance from the Great North-road, the London terminus of which was at the "Boulogne Mouth," or "Bull and Mouth," inn, on the site of which the Queen's Hotel, St. Martin's-le-Grand, was built in 1830. The Bull and Mouth was a coaching-house of renown, and had, down to 1820, three tiers of galleries round the extensive quadrangle, used for loading and unloading the coaches. The gate was an important and rather pretentious structure, with a large carving of King James on horseback in a panel over the carriage-way, and others of the prophets Samuel and Jeremiah over the footways. John Day, the celebrated printer, lived and worked in the rooms over the gatehouse. Inns and taverns abounded in the district, which had, amongst others, the Falcon and Castle; the Black Horse and the White Horse; the White Hart; the Red and the Golden Lion; the Sun, and the Half-moon; the Vine, and the Rose and Rainbow; the Bell, and the Seven Cups; the Cock, the Cock and Bottle, and the Crown. These hostelries were, for the greater part, used for the "entertainment of man and beast," although used also as places of carousal, and resorted to by famous characters. A number of these taverns, old writers tell us, were "very large and convenient for the reception of coaches, wagons, and travellers." From the Bell in Aldersgate, Taylor, the "water poet," started on his penniless pilgrimage to Scotland.

Opposite Shaftesbury House in Aldersgate-street there was another nobleman's mansion,—Dorchester House, in the occupation of the Marquis of Dorchester. Like the mansion opposite it changed its name, and became Petre House, as the residence of the Barons Petre. After the Restoration the mansion and grounds were purchased, and the name was again altered to London House, for the town residence of the Bishop of London. It had "Pottage Pot-alley" near the southern boundary of the property. The Albion Hotel, well known from its corporation and other banquets, its publishers' dinners and trade sales, and various festivities, has been built upon the site of London House, that had a church attached. Before the Great Fire there were five churches in Aldersgate Ward, but only two, St. Botolph's and St. Ann's, after that disaster. There were three trades' guild-halls in the ward,—the Goldsmiths', at the north-east corner of Foster-lane; the Coachmakers', in Noble-street; and the Cooks', near St. Martin's-le-Grand, that was destroyed by fire, after 1666, by a smaller conflagration. Contemporaneously with the occupation of Shaftesbury House by Sir A. Ashley-Cooper, first Earl of Shaftesbury, Lauderdale House, between Cherry Tree-court and Hare-court, was the town residence of another statesman, and zealous, if not unscrupulous Royalist, the only scion of the Maitland family that has achieved the dignity of a dukedom as a part of his guerdon for state services; this was John, Duke of Lauderdale, K.G., High Commissioner of Scotland, Marquess of March, Baron Petersham and Earl of Guildford, Surrey. It may be supposed that there was frequent discussion of state affairs between the heads of the Shaftesbury and Lauderdale houses, so close to each other in state designs and residential locality. Lauderdale House was subsequently in the occupation of a distiller. To the west of London House was the beautiful mansion of the Earls of Westmorland. The Duke of Bretagne had his city mansion near St. Botolph's, but every trace of its existence has long disappeared, excepting the name of the district, Little Britain. The Earls of Peterborough had also a mansion in the same quarter, and Lord Montagu a "superb palace"; so also had the Earls of Northumberland, from

which a writ of King Edward I. was dated, some of the noblemen's mansions in the ward being occasional temporary lodging-places of royal personages. Other lordly mansions were occupied by the noble houses of Suffolk; the Egertons, Earls of Bridgewater; Sir Thomas Shelley, whose house was rebuilt by Sir Nicolas Bacon, Lord Keeper under Queen Elizabeth, and designated Bacon House; of Sir Richard Kennet; of Sir H. Spelman, of the "Glossarium," that was completed by Dugdale, who died in the Barbican. The "fiery Prince Rupert" resided in Beech-lane, Barbican, where he was visited by Evelyn the diarist. The "Fortune" Theatre of Edward Alleyn, who founded Dulwich College, was situated between Whitecross-street and Golding-lane. A man as illustrious as any of those named lived in Aldersgate Ward without possibility of doubt; in 1643 John Milton, who had kept a school near St. Bride's Church, removed to "a pretty garden house" in Aldersgate-street; in Stow's time the district was "full of fair garden-plots and summer-houses for pleasure"; Bridgewater-square, that takes its name from the Earls of Bridgewater, was famous for its fruitful orchards; the names Cherry Tree-court and Pear-court are also suggestive that it was an open and fruity district. Milton afterwards lived in Holborn and in Barbican. "Paradise Lost" was published in Little Britain, and it was some time before it could find purchasers. The Earl of Dorset bought a copy, which he sent to Dryden, who in acknowledging receipt wrote, "This man cuts us all out, and the ancients too." Little Britain was the publishing quarter of the time, and a great resort for book-worms; it is noticed by Isaac Walton, and an interesting description is given of it by Washington Irving.

Among other buildings of interest in the ward was the Hospital or Priory, at the north-east corner of Little Britain, that belonged to the Abbey of Cluny in France; the Priory has long been applied to other uses, but there is still a French church in the locality. The so-called "Shakspeare's house," in Aldersgate-street, about to be demolished, is an ugly structure, and its name an imposture; there is no evidence extant to connect it with Shakspeare.

A SOUTHWARK WAREHOUSE.

AN imposing pile of buildings has been erected in Southwark Bridge-road for Messrs. Petty, Wood, & Co., foreign and colonial brokers, tea, coffee, oil, and sugar importers, drysalters, and wholesale Italian warehousemen.

The building is sufficiently large and lofty to be a conspicuous object at a considerable distance. The principal front is 138 ft. in length, and the height from the pavement to the parapet is 64 ft. The mean width of the ground built upon is about 70 ft. In the rear of the main building there are a boiler-house, with two large Cornish boilers; an engine-house, accommodating a compact high-pressure engine of 40-horse-power, nominal; and an imposing chimney-shaft, with a corbelled cornice: it is about 110 ft. in height. The style of the principal elevation may be called Jacobean.

A principal feature in the façade is a rectangular tower, of about 130 ft. in height to the apex. At the angles at the top of the tower are corbelled turrets, with banded stone roofs. The high-pitched roof of the tower is covered with coloured slates in bands, and has three ornamental louvres on each slope. The ridge is surmounted by a cresting, and has a *flèche* in the centre. Adjoining the tower, at the south end of the frontage, a wagon-way is formed. The arch springs from caryatides carved by Mr. James Frampton. This entrance is closed by folding-shutter work, 25 ft. high by 15 ft. wide.

The elevation is in red brick, with dressings of Tisbury stone. Pether's bricks are used for relief in the arches over the window heads. The principal entrance is enriched with carving. The northern portion of the building is distinct from the business premises, although forming a feature in the general external design. It contains the manager's residence, and bedroom accommodation for about fourteen clerks. A corbelled semicircular oriel thrown out from this part of the front is another feature that contributes to the effectiveness of the design. The principal building has six floors, the tower two additional, exclusive of the roof.

The basement, which is paved with asphalte, contains a number of store-rooms for olive oil, coffee, sugar, and other goods. It also gives accommodation to a great deal of horizontal shafting and the vertical connexions. The principal walls are 3 ft. thick, and very strong flitch girders are thrown across short spans that carry joists 11 in. by 3 in., placed 1 ft. apart. The wood flooring nearly throughout overhead, is 5 in. by 2 in., with iron tongues. Closely placed iron girders and columns do duty for the upper floors. The ground floor has two large sale-rooms, one 67 ft. by 50 ft., the other 57 ft. by 40 ft.; a clerks' office, 33 ft. by 26 ft.; a principals' or consulting room, 18 ft. square, with lavatory, &c., floored with tesselated pavement in Maw's tiles, of very handsome pattern; also porter's room, waiting-rooms, &c. Adjoining the principals' room are two strong rooms, with hollow walls, iron bound, the recesses filled with sand. These rooms are over-arched with brick and concrete. The first, second, and third floors are devoted almost entirely to warehouses, and the fourth to the confectionary manufacturing department, which has waterproof floors, and a kitchen 42 ft. by 40 ft. This upper floor is lighted by a very large louvre with opening sides. The height is 26 ft. from the floor to the ridge. The roof is of strong queen-post construction. The warehouse floors have been tested to bear more than 8 cwt. to the foot super. There are two stone stairs reaching from bottom to top of the building,—one for customers, the other for workpeople. It has two steam-lifts, one equal to 3 tons. Hydrants are provided for each floor in case of fire. They may draw upon two cisterns, on constant supply, holding 8,000 gallons of water. The communications between the rooms and warehouses are fireproof, by double iron doors sliding on rails and hollow tired wheels at the top, and guided by grooves at the bottom. There are eighty-six of these large heavy doors in the building. They have been supplied and fitted by Messrs. Turner & Co.

The plant and appliances in the building are interesting and curious, and include two large chambers with iron floors, in the tower, for coffee-roasting; long ranges of dust-proof spice-bins; six spice-mills; in the confectionery kitchen, twenty copper-pans, jacketted, for boiling apricots, jellies, &c.; with hot closets and steam-presses for various purposes and processes. Consideration is shown for the comfort of the *employés* of the firm. There are lavatories and latrines on every floor. On one floor there is a dining-room for the workmen, and on another a dining-room for the workwomen. These are not merely places where they may go and sit down to eat cold what food they may have brought with them, but are furnished with ovens, boilers, and such cooking appliances as may be needed. Each of the habitual diners has a locker in which to keep what belongs to him or her. The rooms are warmed on May's patented hot-water system; abundant means for the admission of fresh air are provided by the numerous windows and louvres.

The foundations of the building caused much trouble and anxiety from running sand having been struck. The water met with was laid under contribution in making the concrete, which solidified satisfactorily in the trenches, 20 ft. deep, that were dug for its reception. This operation could not be prosecuted at all times, however, as, during high tides, the water rose in the trenches to a level with the river, and at times two steam-pumps were at work night and day to keep down the water. The foundations for the chimney-shaft are also about 20 ft. deep. The concrete was carried down through the running sand in a casing of puddled piles, until a stratum of firm gravel was reached. There are 4,000 cubic yards of concrete in the foundations of the main building.

The architectural history of this large building is somewhat melancholy. It was designed by Mr. Robert Louis Roumieu, who only lived long enough to struggle through the difficulties presented up to the laying of the first course of footings of the foundations, when he died much respected and lamented. The prosecution of the work then devolved upon the son of the deceased architect, Mr. Reginald St. Aubyn Roumieu, who assumed as a partner his father's first pupil, Mr. Kestevin Hill, and had the advantage of his assistance for only about one year and six months, when that gentleman died also, and Mr. Roumieu was left alone in the supervision of the works in hand, which he has successfully completed, recently, in conjunction with his new partner, Mr. Alfred Aitchison.

The work has been executed by Mr. G. S. Pritchard, contractor; steam-engine, boilers, shafting, steam-lifts, and engineering work generally, were provided by Messrs. May, Brothers; Mr. S. Woods has acted as clerk of the works; and Mr. Geo. Poole as contractor's foreman.

ROADS AND ROADWAYS.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.

AT the last meeting of this Society for the present session, Mr. G. Waller Willcocks read a paper on "Roads and Roadways." He remarked that the highways of a country were the veins through which the life-blood of the body social coursed, and that the commercial activity of a community was as dependent upon its means of communication as was the life of the human frame upon the arterial system. The author confined his paper to roads traversed by vehicles with unflanged wheels, drawn by animal power or traction-engines. Such roads might be divided into two great classes, military highways and commercial highways. The Romans, wherever they went, constructed roads, and in later times we could point to the United States of America as affording an example of the benefits which good internal communications were capable of conferring on young nations. The Greeks did not seem to have given much attention to the formation of roads, and Athens, notwithstanding her magnificent buildings, was a dirty and ill-drained town. Having described the method adopted by the Romans in the formation of their roads, the author quoted several passages from Evelyn's Diary, showing the state of roads on the Continent and in England, and even in London, in the middle of the seventeenth century. Dr. Dionysius Lardner, giving evidence before a committee of the House of Commons in 1836, said:—

"A road, to be theoretically perfect, should be, first, perfectly straight; secondly, perfectly level; thirdly, perfectly smooth; and, fourthly, perfectly hard. If it possessed all these qualities in absolute perfection, the consequence would be it would require no tractive power at all. An impulse given to a load at one end would carry it to the other with its inertia alone. This is the ideal limit, to which it is the business of a roadmaker to approximate as nearly as he can, all practical circumstances being considered."

The author then proceeded to show how this might be most nearly accomplished, treating first of country roads, and secondly of town-roads or streets.

Country Roads.—Before finally deciding on a line of new road, careful surveys should be made and trial sections taken; in fact, the work required the same amount of care and attention as that necessary to be exercised in the construction of a railway. Frequently, by going round side-lying ground, deep cuttings, heavy embankments, steep gradients, and costly works could be avoided, with the result of a finer road at a less ultimate expense. Sharp bends should be avoided as much as possible, and the curves set out to proper radii. Great attention should be paid to the nature of rivers, streams, water-courses and general drainage of the land. The bridges and culverts should be built large enough to carry off the maximum amount of water without causing any flooding to neighbouring land or any undermining of the bridge foundations by the great scour arising from the increased speed of the flow of water. A road running across a valley often acted as a sort of reservoir embankment, the engineers not having sufficiently regarded the importance of the foregoing points. The surface of the road should always be above the highest water level, so that during a flood the road might always be passable for foot-passengers. To obtain proper drainage in flat countries the level of the road should be raised above that of the surrounding land. Gradients should be rendered as light as possible, not only to ease the traction of carriages, but also to prevent the washing out of the material of the surface, which not only caused great unevenness, but extra expense in maintenance and danger to the traffic. Gradients should not exceed, except under special circumstances, 1 in 30, otherwise a horse would gain no advantage in descending, as it would have as much trouble to keep the carriage back as it had to draw it up the ascent. In fact, the aim of the road-maker should be to make it possible to drive at a good pace with safety and ease down or up any hill. In ascending a long hill there should be no undulations, but the road should rise all the way, except, perhaps, here

and there short lengths on the level. Roads resembled many organic objects in requiring air and light, and therefore it was not advisable to hedge them in too much, but only so that the fences were strong enough for the farmers' protection. In many parts, however, as, for instance, in the Eastern Counties, there were no hedges at all, but, instead, wide and deep ditches on either side of the road. These rendered the roads very dangerous. The road formation (*i.e.*, the ground surface below the structure of the road) should be properly prepared to receive the stones, as any extra amount of metalling was a poor and expensive remedy for compensating any neglect in that respect. However good the metalling, it would be of no avail unless the foundation were fit to receive it. The ground, if soft, should be rendered hard either by rolling or punning*; and if likely to be wet, shallow grips should be cut transversely, at intervals varying from 15 ft. to 40 ft., according to circumstances, filled in with dry work, in order to effectually drain off any water which might otherwise accumulate. The surfaces of roads were frequently burst up after a severe frost, owing to the accumulation of water below; but that would not happen in the case of roads constructed on scientific principles. The importance of drainage could not be overestimated. The soil should never be forced up into the metalling. If the formation were clay it would be advisable to cover it over with a layer of dry earth or cinders. On a railway upon which the author was engaged it was found that in one cutting there was upwards of 10 ft. or 15 ft. of soft peat or bog below the formation. When the line was ballasted the rails continually sank, and the "stuff" oozed through the ballast, which was composed of large clinkers from iron slag-heaps. As the rails sank the ballast was cleaned and more laid down, until there was a thickness of 5 ft. or 6 ft. under the sleepers. This ultimately proved to be the easiest portion of the line to keep in repair. The slag, from its rough angular forms, made an excellent foundation, and was better than fascines or brushwood in such a case. The following extracts were from the specification for a railway by one of the greatest of our late engineers, but they held equally good for the formation of roads:—

"*Cuttings.*—The cuttings shall in all cases, during the progress of the excavation as well as afterwards, be kept perfectly well drained, and any slush or wet stuff shall be disposed of. The bottom of the cuttings, excepting in rock, shall not, in the first instance, be excavated to within 18 in. of the 'formation line,' and any greater thickness shall be left on which, in the opinion of the engineer, may be necessary to prevent the ground at the depth of the formation-surface being cut up or disturbed in any way by the carrying on of the works; and this surface shall not be finally uncovered and formed until such period of the progress of the works, and during such weather, as shall admit of its being perfectly well drained, and altogether secured from being in any way broken up or disturbed by men or horses walking over it, or from any other cause, nor unless it can, if required, be covered with ballast within three days of its being formed."

"*Embankments.*—Unless the embankments consist of rock or other materials which, in the opinion of the engineer, do not require such precautions, the surface shall, from the commencement, at all times be kept thoroughly drained; and any hollows arising from a settlement, or from the wear on the temporary roads of the contractor, or other causes, shall immediately be drained and filled up, and every other precaution shall be taken to prevent any surface-water from collecting or soaking in; and before laying on the permanent ballast, the surface shall be carefully trimmed to the required shape and height, and the lumps broken, and all loose materials trodden or broken in; and, generally, all means shall be taken to form a solid smooth surface of the form shown in the cross sections; and all similar precautions shall be taken to prevent the surface being injured. . . . Where the embankment consists of clayey soil, or of any material likely to be injured by the wet soaking in from the ballast, or which will not allow the water to drain freely through, *permanent cross drains* shall be made in the formation surface at every chain, the bottom of such drains being formed 9 in. in breadth."

Where possible, drains should be made on either side of a highway, and in such a manner that water could readily fall into them from the road. On soft spongy ground a foundation could be made of fascines. Fascines were bundles, from 12 ft. to 20 ft. long, and from 8 in. to 10 in. in diameter, of rods of brushwood, viz., willow, hazel, ash, or the like, the rods not exceeding 2 in. in diameter. The slighter sticks should be inside, and the stouter ones outside the faggots, the thick ends being placed alternately in different directions. Straight rods only should be used, the crooked ones being straightened by cutting them partly through. They should be tightly and strongly bound with willow or other pliable wood, or with iron wire at every 10 in. or 20 in.; on the binding the whole strength of the work was dependent. The fascines were placed on the formation, the first layer being laid transversely, the next longitudinally, and the third transversely to the line of road, fastened to the ground by strong sharpened stakes. Three layers were generally considered sufficient. The fascines would last longer if kept always wet than when alternately wet and dry. The fascines should afterwards be covered with earth or large stones, and then by the metalling. Brushwood about 6 in. deep, unbound, was sometimes used, but could not be so well recommended as fascines. There had been much dispute as to the form of the cross section of the road surface. Some maintained that it should be a convex curve, but that was in many respects open to objection. Where that section was used the bulk of the traffic selected the crown of the road, as that was its flattest part, thus tending to the undue wear of that portion of the surface of the road. Another cross section consisted of two inclined planes, rounded off at the apex, the slope being greater or less according to whether the road was rough or smooth. A slope of 1 in 30 was an average rate of inclination, but it should always be greater than the gradient of the road, so that the water running down the hill might flow away into the side ditches. When a road was on the side of a hill, the military and Indian authorities preferred a cross section with one slope only, and that inclined inwards, the surface and other water flowing away by means of drains under the road. Considerable discussion arose between the partisans of Telford and MacAdam as to the best method of building the superstructure, Telford maintaining that it was necessary to have a rigid foundation, properly constructed of large stones, hand-laid, thereby forming a solid and non-elastic surface; whereas MacAdam contended that it was only requisite to place the metalling directly on the formation, and that elasticity improved the road. The author said he thought that practical experience showed that elasticity was to be avoided in road-making. MacAdam was opposed to the system of mixing a binding of sand or gravel with the broken stone,—a system now largely adopted by road-makers. In selecting material for the construction of his road, the engineer was to a great extent obliged to take such as he could obtain from the locality, and these in a great many cases not always of the best. It would often be found cheaper to use good road metalling, brought from a distance, and costing perhaps three or four times as much as local inferior stone, inasmuch as the subsequent expense of maintenance would be considerably reduced. Stone for the purpose of road metalling should be hard and tough, to bear the strains, blows, and vibrations of heavy carts. It should also be able to withstand all atmospheric influences without the disintegration of its parts. Soft stones caused heavy roads in wet weather, and in summer they produced dust. In selecting granite, great care should be taken to see that the rock was fine and even in quality, as the coarser granites were more easily decomposed. Some feldspathic granites, as those of Devonshire and Cornwall, after decomposition produced a fine china-clay. The more feldspathic granites were not as lasting as the quartzose. Syenite (a granite in which hornblende took the place of mica) was the only granite that could be relied upon. The darker it was in colour the more durable it was. The best stones for road-metalling were found amongst the Trappean rocks. The basalts were well known by their peculiar structure, and also by their dark and compact texture. Green stones were more variable, and not so close-grained. Whinstone (a green stone) was extensively used in the north of England and Ireland, and also in Scotland. In the metamorphic system was found gneiss, which, although of similar constitution as granite, was inferior in quality. The mica was more in layers, and the rock could be quarried out in slabs, hence it could be used for flagging. Mica-schist was composed of mica and quartz, and was utterly unfit for use as road-metalling. The limestones which were crystalline (resembling marble), found in the older formations, viz., the Metamorphic, Silurian, and Carboniferous, were the only limestones which could be recommended. The oolitic limestones were to be condemned, although they might make a good foundation or core if not subjected to wet and frost. Quartz rocks, flints, and silicious materials, although hard, were too brittle to bear heavy traffic, although flints were extensively used in the south and south-west of England, where the chalk system was so predominant. In the suburbs of London, where flint was much used in macadamising, the roads during wet weather were always in a dirty state, little difference in that respect being noticeable in the main thoroughfares, formed of granite metalling. When the flint-metalled roads were cleansed the surface naturally suffered great deterioration, owing to the scraping-away of the materials used in their construction. In many parts of England, more especially in the Fens, it was difficult to obtain good road-metalling, and therefore gravel was extensively used, but this made the roads very heavy. At Felixstowe, in Suffolk, where all the low-lying district was composed of pebbles, with little or no sand, some good roads had recently been constructed by Colonel Tomline. The surfaces of the roads were composed of pebbles, mingled with chalk. These roads were firm, but naturally not so good as those made of broken stones, as they were more affected by wet or frosty weather. The cost of the construction of a country road of course varied with the prices of the materials required for use. Quarrying cost from 7d. to 1s. 6d. per cubic yard; breaking stones cost from 1s. 4d. to 2s. 3d. per cubic yard; spreading the materials cost from 4d. to 6d. per cubic yard; and to these prices was to be added the cost of conveyance. As a general rule, it might be taken that when materials were obtainable on or near the route of the road, the cost varied from 1s. to 1s. 6d. per superficial yard (including the forming). Maintenance should be thorough and complete, and an adequate staff of workmen should be constantly employed in filling up ruts and holes, keeping the surface and side ditches clean, and preventing any accumulation of rubbish which might interfere with proper drainage. Mud should never be allowed to accumulate. During wet weather roads should be scraped after heavy showers; there would then be less chance of any unevenness in the surface, as hollows would be discovered and filled up. But a road should be thoroughly repaired when it showed signs of being worn too much. The best time of the year for that operation was during the wet season, as then the new material would have the best chance of binding with the old. The old surface, if suitable, should be "picked up" an inch or so deep, to enable the new material to work in. The new metalling should not be thickly laid on, about 2 in. (or one stone deep) being sufficient. A cubic yard of stone should cover a superficial rod of surface. But putting on new material was not altogether what was required. Attention should be given to the formation and a proper cross section of the surface. On a road of ordinary traffic one man to every three miles was generally sufficient to keep the road in proper repair. Picking or "lifting" the surface cost from ½d. to 1d. per superficial yard. The cost of maintaining a road with country traffic varied from 10*l.* to 60*l.* per mile. In or near populous towns the cost was considerably more. Some details of the cost of road-making in County Antrim (Ireland) and in Ceylon concluded the first portion of Mr. Willcocks's voluminous paper, of which first portion the foregoing is merely an abstract. Of the second portion of the paper, treating of town roads and streets, we will give an abstract next week.

* Some engineers are in favour of punning, others of rolling. Punning binds the particles of earth close together; but rolling, whilst effecting the same object, disturbs the surface.

Election of City Architect, Dublin.—At the last monthly meeting of the Corporation of Dublin, the Lord Mayor in the chair, one item of business was the election of a City Architect at a salary of 500*l.* a year. There were eight candidates,—Messrs. Oliver, T. Healy, W. K. Parry, W. G. Doolan, D. J. Freeman, F. Wall, R. S. Lewth, P. Butler, and J. B. Sloane. Mr. Carson objected to the appointment being made. He did not think they had any business for a City Architect. Mr. Doyle said it was too late to raise the question; but Mr. A. O'Neill said that as chairman of the Finance and Lease Committee, he would strongly repudiate the responsibility of having anything to do with the city property unless he was fortified by the advice of a City Architect. A ballot was then taken, when there appeared:—For Mr. Freeman, 27; for Mr. Doolan, 14; for Mr. Parry, 1; for Mr. Butler, 1. The Lord Mayor declared that Mr. Freeman had the majority of votes, and on the motion of Mr. French, seconded by Sir William Carroll, Mr. Freeman was declared duly elected City Architect.

A MORNING PERFORMANCE IN A ROMAN AMPHITHEATRE.

THOSE strangers who visit Northern Italy this year will have the opportunity of enjoying the last few weeks' existence of one of the most time-honoured of the traditional institutions of the old Roman and Mediæval citadel of Verona; what we in our modern theatrical jargon would term the "morning performances" in the Roman Arena. The fate of this favourite institution, after so many generations of existence, is now sealed, to make way for the restoration of the old Roman theatre, the stone benches of which, so many generations ago (considerably more than fifty generations), the Roman provincials crowded on their fête days, to witness a very different amusement to that which is now in its last weeks of existence,—the sun-lighted performance in a temporary theatre of painted boards, erected in the centre of the Arena, of a drama, which, if historical, is "mounted" with that peculiar disregard to correctness or artistic consideration of costume, of colour, and of scenery, which mark the Italian stage of the present day, but a performance admirably acted in the true old dramatic style, which, thanks to the "*Conservatoire*," is still preserved on the foreign stage.

Byron, in the few rare fragments preserved of his memoirs, the fate of the greater part of which is a subject of regret to every literary student, says that Catullus, Claudian, and Shakspeare have done more for Verona than she has ever done for herself. Such a sentence,—which from an artistic, rather than a literary point of view, is by no means consistent with facts in a city which, with truth, has been called "a gem of art,"—could scarcely with justice be passed in the present day, when we see with what zeal, and, in more than one case, with what artistic scrupulousness, the city has been re-adapting and restoring those justly-famous monuments which have for so many generations attracted the stranger, learned and unlearned, from beyond the Alps.

After the restoration of Fra Giocondo's once beautiful *Loggia*,—not by any means one of the happiest results of the renovating zeal of the municipality,—the Ca dei Mercanti, and, above all, the scrupulous and praiseworthy restoration of the twelfth-century courtyard of the Palazzo di Mercato Vecchio, it is now to the old Roman Amphitheatre that the municipality have turned their attention, the Amphitheatre of which Byron has spoken as surpassing all those of Greece. If the work is carried out with the same conscientious scrupulousness as the restoration of the Palazzo di Mercato Vecchio above referred to, the future will indeed have to thank the governing city bodies of Verona of this last quarter of the nineteenth century.

And now the Amphitheatre is about to be restored, or rather re-restored, that is, the lower portion of the interior. The fact that the old pile has been able to exist until our days is alone due to the care with which the monument has been in the past watched. As far back as the early years of the thirteenth century, a statute, still in existence, shows how one of the obligations of the *podestà*, or mayor, consisted in his spending, during the first six months of his holding office, a fixed sum *reparatione et refectione Arenæ*. In the sixteenth century the stones of the interior which had been, in the course of centuries, taken away, were replaced, but with so little observation of the methods and plans of the ancients that now more competent antiquaries, and especially the engineers, demand a restoration. The simple but effective system by means of which the Romans prepared for a heavy downpour of rain into the open funnel of the Amphitheatre by a system of small canals, which still exist on the surface of the higher and untouched steps, or rather seats of the interior, was entirely overlooked in the sixteenth-century restorations, and the rain and the damp are now beginning to work their natural effect on the stout old pile. And so the Amphitheatre is to be handed over to the workmen again, and the traditional,—and, let it be said, not too beautiful,—booth-theatre of the Arena is doomed to disappear, to the delight, if not of the Veronese public, at least to that of all genuine appreciators of the noble work of the Roman days.

Historically, the temporary open-air theatre possesses no little interest from its associations, as year by year, with the *fêtes* of Easter, the placards, with their rude view of the Amphitheatre, have announced for so many generations past, the reopening for the summer of the *baracca-teatro* of the Arena.

The French president, De Brosses, of parliamentary, literary, and historic fame, has left us in his Memoirs some amusing details of his journey through Italy in the last century. In July, 1739, we find him in Verona, and of the Veronesi and the town he gives not a few curious details. Among these, he mentions the booth-theatre of the Arena, the principal places for which cost only ten soldi,—one can still have a seat in the pit for nine sous,—the rest of the audience stood or sat upon the steps of the Amphitheatre, and among the crowd the worthy president noticed not a few ladies, and more priests than he had ever seen in the processions. "There was dancing also," he writes; "one sylphide, as tall as a grenadier, made twenty bounds in succession, and for lightness excels our Camargo, who to her seems to my recollection but a stone." This compliment would show an extraordinary power in the Italian *ballerina*, when we consider the immense popularity in France of the accomplished Camargo. "I was witness," De Brosses continues, "of a strange scene. At a certain point in the representation, a bell having rung, I heard behind me a sudden movement, which, at first thought, I imagined would destroy the Amphitheatre, the more so as I saw the actresses flying from the stage, as also one who, according to her part, was fainting. The real cause for this disturbance was the sounding of the *Angelus* or pardon, and that at its ringing all the spectators had kneeled and turned towards the east; that the actors had done the same on the stage, and all were singing, excellently well, the *Ave Maria;* that completed, the actress who had swooned, made the usual bow after the *Angelus*, returned to her part, and the comedy continued. To really understand how original the whole scene was, one must have been a witness of it."

The same author tells us how he was present at a great fête given in the Arena in honour of the Duchess of Modena, on which occasion there were no less than 30,000 persons in the Amphitheatre. De Brosses, in addition, is very complimentary in his remarks on the Veronese ladies, who, in these days of "beauty-mania," cannot fail to strike the observant stranger. He writes,—"In the central portion of the city, the houses are all adorned with large balconies of beautifully-wrought iron-work, and bearing boxes full of flower-pots and orange and lemon trees; so that one seems to be walking in the gardens of Semiramis, with the danger, however, at the least puff of wind, of seeing these pots showered down upon one's head.* The women of these parts are tall, fine, and blonde, such as we see in the pictures of Paul Veronese, the Venetian women enjoying the reputation of being the most beautiful of all Europe."

Ninety years later, we find Heine, in his *Reisebilder* (of 1828), speaking also of Verona, and the charming faces of the girls and women whom he saw in the picturesque Piazza delle Erbe, the large languid eyes, the graceful figures, so unconsciously dirty. "The women of Verona," he writes, wear over their heads (an elegant custom still in use all over Venetia, and, indeed, all Northern Italy), the black veil brought round over the shoulders, and disposed with such artful carelessness as to set off, rather than conceal, the form of the bust; the servants have their heads dressed with silver pins, while the peasant women wear large straw hats, adorned with flowers. The men's costume differs, however, but little from that of the rest of Europe." But since Heine's days even the broad straw hats have disappeared.

Heine has naturally not forgotten to make mention of the Arena, and there he saw, also, the theatre. "When I entered the Amphitheatre," he concludes, "I found a comedy being acted. On a small stage, erected in the middle of the Arena, was being represented an Italian *burletta*, and the spectators were seated, some on chairs, some on the seats of the old Amphitheatre. I took my place among these latter, and listened to the declamations of *Brighella* and *Meneghino*, from the very same seats on which the Romans so long ago applauded the bloody combats of the gladiators and the wild beasts. Above us extended the blue pavilion of the sky, as lovely and immense as in those distant days; gradually the dusk of the evening crept over the face of nature, and quietly increasing each moment in intensity, one by one the stars came out; *Arlecchino* laughed, *Colombina* despaired, and at last *Pantalone* understood, and the hands of the happy pair were at length united. The people burst into applause, and rapidly dispersed, gay and contented with their afternoon's amusement."

And such a scene one may still enjoy, though literally "for a few weeks only," and on the rare fine afternoons and *festa* days which we have had this melancholy spring, the old seats of the Amphitheatre were crowded, not the least important portion of the audience consisting of the young conscript soldiers in their effective uniforms, artillerymen, cavalry, infantry, and the fluttering picturesque costume of the *bersaglieri*.

It is a temptation too great to be resisted, that of clambering to the highest steps, even at the penalty of only being a witness of the dumb show so far below, for from the upper row of seats, identically the same superb old red Verona stone seats of the antique Amphitheatre, beautified with their fossil ammonites, one enjoys a sight that repays the exertion of the ascent; below one, the simple oval form of the Arena itself, in the midst of which one can see the dumb show still continuing; and far around a perfect panorama,—in the true sense of the word, a view all round the horizon,—of the neighbourhood of Verona, the beautiful Alps, with the snow-clad chain of Monte Baldo, on the other side of which lie the ruffled deep blue waters of Lake Garda, the Euganean hills, near Padua, and the vine-covered slopes of the undulating hills on the north; below, at our feet, the old town with its fourteenth-century spires and quaint houses and narrow streets, and fragments of Roman and Middle-age walls and fortifications, and the hoary cypresses of the beautiful Giardino Giusti.

And as the sun sets and the shadows deepen in the picturesque old street beneath, the evening *Angelus* rings out from the neighbouring church of S. Nicolò, but no longer does it produce the magic effect which so long ago De Brosses described; the performance continues undisturbed till at length the curtain drops, and the spectators pour out from the broad *vomitarii* and disperse through the narrow streets, some to their homes, some to the *cafés* in the Piazzo Brà, and not a few to the quaint old *osterie* that congregate, as they have done for centuries, about the neighbourhood of the antique Piazza delle Erbe and the tombs of the Scaligers.

* The ironwork may still be seen in all its beauty, but the flowers and flowerpots are gone.

NOTTINGHAM.

COWPER believed that the "looking back upon our forefathers,"—on their "vast rambling mansions; the Gothic porch, smothered with honeysuckles; their little gardens and high walls, their box hedges, balls of holly, and yew-tree statues,"—would have led to the belief that we seemed to look back upon the "people of another nation." In very considerable degree this remark would apply to the ancient borough of Nottingham. Its ancient history is a record of battles and sieges, of turmoil and tumult. The place of the "dwelling of caves" is unquestionably old. There the occupying Danes were driven out by the Saxon king of Mercia, and the battle on the walls took place before the Conqueror rebuilt the castle. In the struggle between Stephen and Matilda, in the wars in the times of the Plantagenets, and in those between king and Commons, the castle had its uses before after-iconoclasts dismantled it; and the mansion which the Duke of Newcastle built came to grief in 1831, when the mob avenged on the building the opposition of its owner to the first Reform Bill. The ancient convent of the Hospitallers of St. John of Jerusalem; the massive church of St. Mary; the Free Grammar School; the Town-hall, replacing one of timber and plaster,—point, with numerous other erections, to the antiquity of the town; whilst a corporation dating back to time beyond the memory of man eloquently testifies similarly. Its trade is old; customs that were quaint surrounded it; and, down to a generation or two ago, the progression of Nottingham was slow and steady, not to say occasionally checked by the obstructions which dislike to improvements occasionally interposed.

Looking back at Nottingham, only forty-four years ago, we have many tokens of the change it has since known. In the government of the town, then, sheriffs, coroners, bridge-masters, and senior and junior common-councilmen took part, the mayor being also the lord of the manor, and holding courts leet and baron. There were three

parish churches, a chapel-of-ease, and twenty places of worship for Nonconformists. The town was of a literary turn, keeping up its three weekly papers; and having many libraries and newsrooms. Its charitable institutions and philanthropic associations were many; its markets flourishing; and its population of 50,680 was then large amidst those even of the capitals of counties in the Midlands. Its trades included the manufacture of laces, of hosiery, the throwing and dyeing of silk, and bleaching, as well as others of subsidiary rank. Looking a little closer at some of the industrial phases of the town and at its commerce, it may be noted that the six bankers in those days included some no longer known; that there were fourteen bleachers, and 500 persons and firms enrolled in the "bobbin-net" makers' list; the two "coal-masters" were Lord Middleton, at the Old Radforth Colliery, and the owner of the Babbington Colliery. There were four cotton-spinners; lace-thread makers and dealers were almost legion; hosiery was one of the special town trades, as was that also of straw-hat manufacture. At the Trent Waterworks, the now well-known name of Hawksley was that of the engineer. A score of coaches were the means of travel; the carriers were many; and from the Leen Bridge, Three Cranes, and "Hannah Cutt's" wharfs, there was conveyance by water to many of the chief centres.

First in the changes of the Nottingham of to-day from that which has been thus briefly glanced at is the growth of the population, which was 66,621 at the last census, and is now estimated to be fully 100,000. Next, there has been a change in the condition of the governing bodies, and in none of these is this more marked than that of a recent one in the guardians of the poor. Early last year the guardians applied to have their term of office prolonged to three years, and of the 24,500 there were, on a poll, 12,483 votes in favour of the proposal, and a Local Governmental order, in March, 1878, altered the tenure of office from one to three years, so that Nottingham occupies a position of singularity in this respect. There has been a full development in the trade of the town. It still has its lace-manufacture for staple, but, in addition thereto, in large dimensions, the silk and cotton trades exist; whilst in subsidiary but still important dimensions wire-works, dye-works, and breweries are found, with the trades that are common to most large towns. Into surrounding villages the trades have overflown,—Beeston having its silk-mills, Wilford its coal-mine, Burton Joyce its hosiery trade, and Lowdham its gun-wad and paper works. Trade brings with it inevitable effects, and Nottingham prospered: the towers of its churches and chapels, rising high into the ether, show that its gathering-places for the sects have increased in number. Its charitable and educational institutions are in greater abundance. A beautiful arboretum has been added, and alike in situation and in the skill with which it is laid out it is creditable in every way to the great midland town. Nottingham has lost in the interval some of its ancient carriers, but its travel and traffic are contended for by two of the great railway companies, and year after year there have been vast sums spent in the provision of accommodation such as the importance of the town and the extent of its commerce demand.

As to the future of Nottingham, so much cannot be said. Its staple trade is one which does not rest upon the broadest basis. But it is not only on its lace trade that Nottingham rests, for it appears that other of its textile manufactures are widening. Its central position is attracting to it other trades; but as it wants those great mineral industries which cause towns to spring forward by bounds, it is evident that solidity rather than speed will characterise its progress. Moreover, the fact needs to be borne in mind that there are not in the trades with which it is more related those violent fluctuations that are known in the great mineral industries. The latter change their centres very frequently, as ore supplies are shortened, as fuel fields are exhausted, or as changes in the form of demand occur such as that which at the present time is likely so materially to benefit the great depositories of our phosphoric iron ores. There are no changes so marked or emphatic in the great industries on which Nottingham chiefly depends. It is true, as has already been hinted at, that it is a coal-producing county, but its production is limited; it is less than that of its own full needs, in all probability, for the three to four million tons which its forty-six collieries yield would not suffice for all the wants of a large and well-populated county. As time passes, it is true that the aspect of the county of Nottingham changes. The days when "the proud sheriff of Nottingham did cry a full fair play;" and when "bold Robin Hood" sold pots in that city, and dined with that proud official, are gone. The grave of the celebrated outlaw is shown at Kirklees now. Nottingham has lost, practically, its forest of Sherwood, and though it has lost neither its memory of nor liking for the men in Lincoln-green, yet could these revisit their old haunts they would find that the centuries had been periods of change, and that, as the American poet says,—

> "the bitterest foe
> To modern laws has felt their blow,
> Consented to be tax'd and vote
> And put on pantaloons and coat,
> And leave off cattle-stealing."

Laying its account to supply some of the modern needs and some of the whims of fashion, Nottingham has advanced, and will yet advance, in the ranks of towns; but whilst so advancing, and gathering around it many of the accompaniments and industries of urban life, whilst giving itself some of what should be deemed the essentials of towns,—as much needed as good sanitary regulations,—it is to be hoped that it will never forget the past, in which it has at times so proudly figured. Old towns and cities are at a disadvantage in contrast with more modern ones in this respect; it is true that there are accompanying advantages, for age in towns usually brings wealth, but there are the accompanying responsibilities, and the poverty which is so often found therewith. In these respects the ancient town is not an exception; and relying on these and on its natural advantages, it may in the future advance with even greater rapidity than in the bygone centuries.

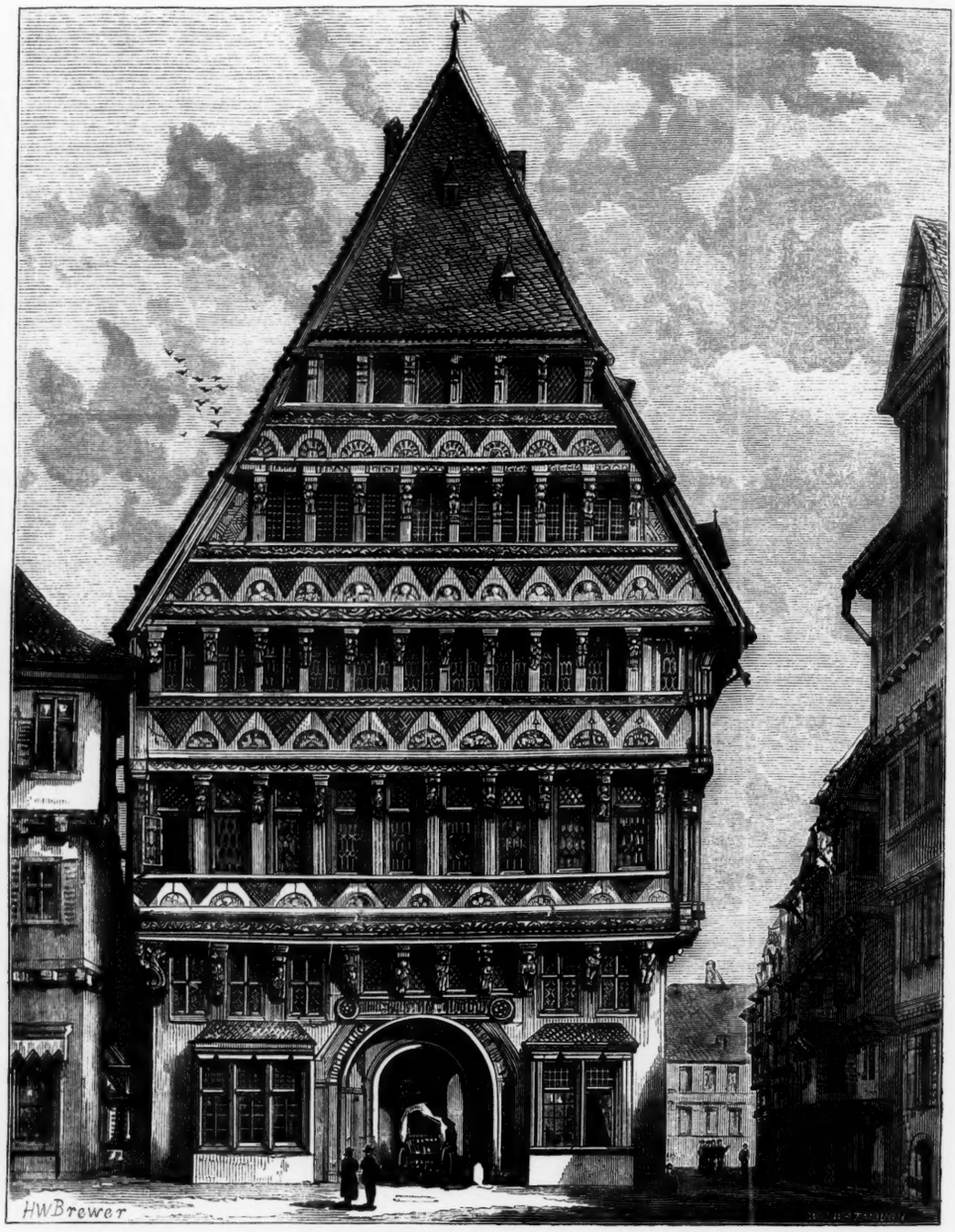
HOLBORN TOWN-HALL AND DISTRICT BOARD OFFICES.

VISIT OF THE ARCHITECTURAL ASSOCIATION.

On Saturday last a large number of the members of the Architectural Association visited this building, which is now rapidly approaching completion. The visitors were received by Mr. H. L. Florence, president of the Association, and joint-architect, with his partner, Mr. L. H. Isaacs, of the structure. The site is at the corner of Gray's-inn-road and what was formerly Liquorpond-street, but which, considerably widened, is now known as Clerkenwell-road, and forms, in continuation of Theobald's-road, part of the line of new thoroughfare from New Oxford-street to Bethnal-green. The new building has a frontage of 100 ft. towards Gray's-inn-road, and a return frontage of 124 ft. next Clerkenwell-road. The building commands three thoroughfares, each 60 ft. wide, viz., Theobald's-road, Gray's-inn-road, and Clerkenwell-road, and it is probable that at no very distant date a fourth thoroughfare of like width will converge on this point, viz., the proposed new street from the opposite corner of the Clerkenwell-road to the "Angel" at Islington. This new street has long been wanted, the only available direct route for traffic between Holborn and Islington being the perilous one *vid* Elm-street and the so-called "Mount Pleasant." It will thus be seen that the site is an exceedingly prominent one, and the Holborn District Board of Works are to be congratulated on their desire that their new building shall be worthy of its position. The land was cleared by the Metropolitan Board of Works under the provisions of the Street Improvements Act, 1872, the area being 12,800 ft. superficial. We are informed that the Board asked, as the price for letting on a lease of eighty years, 1s. 6d. per foot superficial, or 960*l.* per annum, and for the fee-simple, twenty years' purchase of this rental, or 19,200*l.* In consideration of the site being required for buildings connected with local administration, the Metropolitan Board consented to reduce the price of the freehold from 19,200*l.* to 18,000*l.*, at which latter sum it was acquired by the District Board. The foundation stone of the new building was laid with some ceremony on the 3rd of 'August last by Sir James M'Garel-Hogg, M.P., chairman of the Metropolitan Board of Works, as reported in the *Builder* at the time.* On Saturday afternoon last the visitors found, on their arrival at the building, that with commendable forethought (and it is worth mentioning from the fact that it is so seldom done) the whole of the contract and detail drawings had been conveniently arranged on screens for their behoof. Mr. Florence gave a *viva-voce* explanation of the different uses to which the various parts of the building will be devoted. We gathered from him that the portion of the ground-floor towards Gray's Inn-road will contain a public office for the conduct of the general business of the Board, and immediately adjoining will be offices for the Clerk, Surveyor, and Medical Officer of Health. With the exception of the entrance at the east end of the building to the gallery of the public hall, the whole of the remainder of the area on the ground-floor will be devoted to the purposes of a stone-yard and depôt. This will be for the most part open to the sky, but it will extend under almost the whole of the public hall, the floor of which will be supported at intervals by cast-iron columns. The stone-yard will be approached by a carriageway passing from Clerkenwell-road under the public hall. In the rear of the yard, and detached from the main building, there have been provided a mortuary, *post-mortem* room, and disinfecting-chamber, the want of which accommodation has long been felt in the district, The public hall occupies the upper part of the Clerkenwell-road frontage, and is 90 ft. long, 45 ft. wide, and 30 ft. high. It is intended to seat 1,200 persons,—1,000 on the floor, and 200 in the gallery before referred to. The floor is fireproof, being constructed of brick arches, turned from cast-iron skew backs resting on continuous wrought-iron transverse girders supported at intervals by the cast-iron columns before mentioned. The ceiling, which will be coved and panelled, is rendered in Keene's cement, the enrichments being in *carton-pierre*. The joinery and fittings in the public hall will be of American walnut: in the other parts of the building they will be of pitch pine. Ample room for the stowage of chairs and other furniture will be provided in the space between the ceiling and the roof of the hall, a shaft being provided on the gallery staircase to facilitate the removal or replacement of such furniture. The public hall is approached through a doorway and entrance-hall at the corner of the site, leading to the principal staircase, 6 ft. wide, which will be of stone, with balusters of Doulton ware. On the same level as the public hall is the Board-room, 48 ft. long by 30 ft. wide, together with a committee-room, lavatory, &c. The *façade* towards Gray's-inn-road is carried up one story higher than that towards Clerkenwell-road, in order to provide a suite of rooms for the use of the housekeeper. In the basement of this portion of the building, strong rooms are provided for the preservation of the books, papers, and archives of the Board. The style of architecture employed is Italian, freely treated, a prominent feature in the composition being a clock-tower, 100 feet high, at the angle of Gray's-inn-road and Clerkenwell-road. The materials employed in the elevations are red brick and Portland stone, the doorway forming the approach to the public hall and board-room, as also the pilasters to the windows, being of polished Aberdeen granite of a dark grey colour, supplied by Messrs. Manuelle. The works are being carried out from the drawings and under the superintendence of Messrs. Isaacs & Florence, architects, Verulam-buildings, Gray's-inn,—Mr. Isaacs occupying the position of surveyor to the Holborn District Board of Works. The present contract was taken by Messrs. Browne & Robinson, at the sum of 25,987*l.* It is probable that the total cost of the buildings, with site, fittings, and furniture, will be 50,000*l.*, and it is thought that they will be finished by Christmas next. Mr. Farrow is the clerk of the works, the contractors' foreman being Mr. Cornish.

* *Builder*, vol. xxxvi., p. 845.

Bristol and Gloucestershire Archæological Society.—A meeting will be held at Cheltenham on July 8th, 9th, and 10th. On Tuesday the mayor and corporation will receive the Society at the Ladies' College; visits will be paid to the parish church, and afterwards to Leckhampton Court and Church; the dinner of the Society will follow; and there will be an evening meeting. On Wednesday the Society will make an excursion, which will include visits to Cleeve, Southam (House and Chapel), Sudely Castle, Winchcombe Church, and Postlip. On Thursday the Society will make an excursion to Cubberley, Cowley, Elkstone, Brimpsfield, Birdlip, and the Roman villa at Witcombe.



THE KNOCHENHAUER-AMTHAUS, HILDESHEIM.—SIXTEENTH CENTURY.

THE "KNOCHENHAUER-AMTHAUS," HILDESHEIM.

THIS most interesting building is situated in the old market square at Hildesheim, and is without doubt one of the most splendid wooden buildings in Europe. The date of its erection is known to be 1529. The word "Knochenhauer-amthaus" would, we suppose, be translated into English by "The Hall of the Butchers' Company," though, perhaps, some of our German readers may be able to supply us with a better translation of this word. The building was in such a terrible condition in the year 1852 that it was necessary either to pull it down or restore it, when a senator of Hildesheim, Herr Rœmer, prevailed upon the Hanoverian Government to purchase and restore it. This has been done with considerable care, as much of the old work being kept as was possible, and the building is now used as the town savings-bank. As will be seen from our view, the building is not entirely of wood, as is the case with many of the Hildesheim houses, but rather suggests the English mode of building, the panels between the "posts" being filled in partly with brick. The cornices are very finely carved, chiefly with foliage. One side of this building is corbelled out over the street, but the opposite consists of a solid stone wall. This gives the gable end rather a disagreeable effect as to its general outline, which is the only defect about this charming building.

NEW POLICE-COURTS AND STATION, BOW STREET.

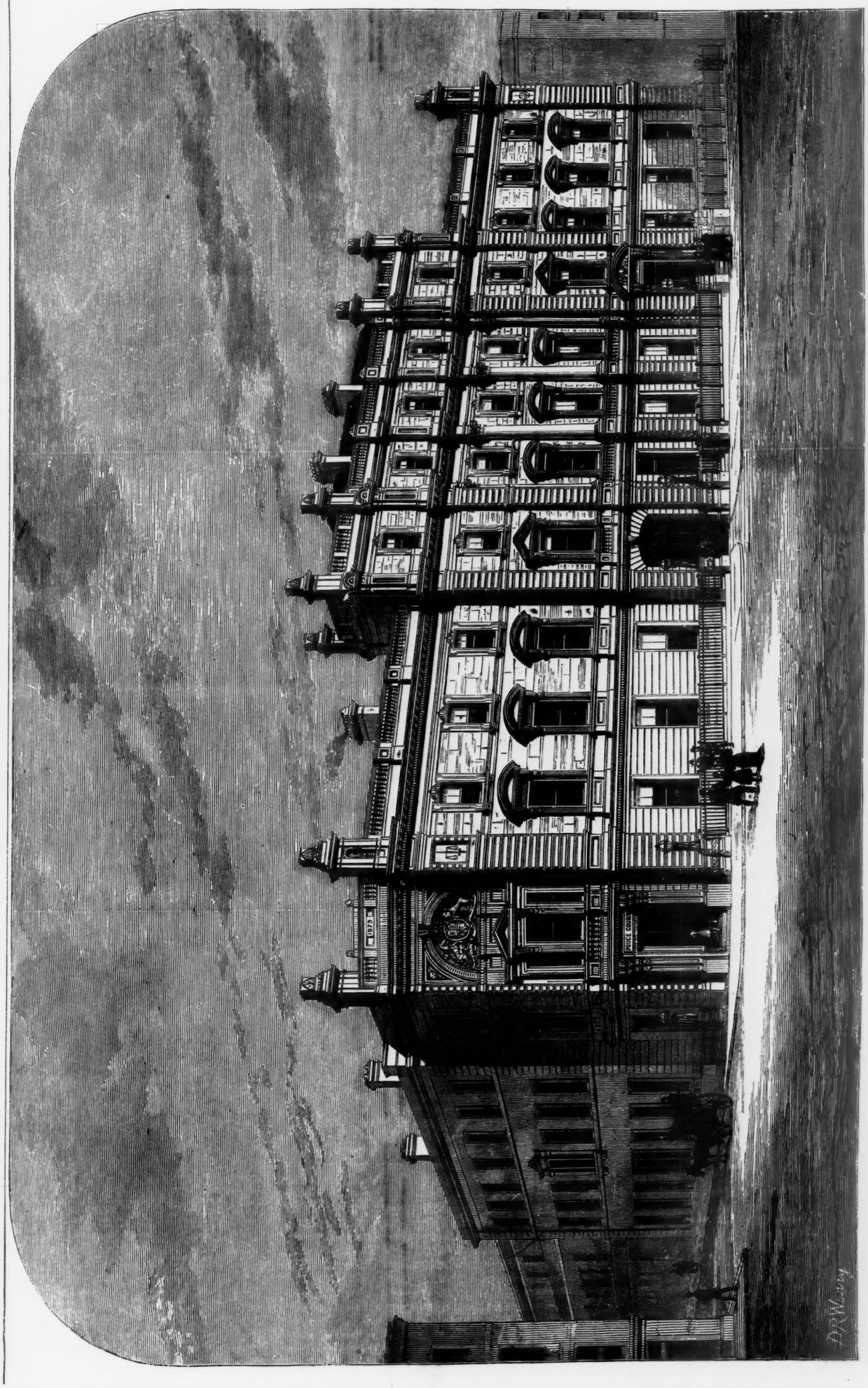
THE site of this building, which has been secured on a long lease from the Duke of Bedford, is on the east side of Bow-street, facing the Royal Italian Opera-house, and, as may be seen by reference to the plan given in our present number, it possesses the advantage of being in great part detached from neighbouring buildings, having also frontages to Broad-court and Cross-court on the north and east respectively.

The line of frontage to Bow-street is set back from the original line at the northern end, as required by the lessor, with a view to the ultimate improvement of the street.

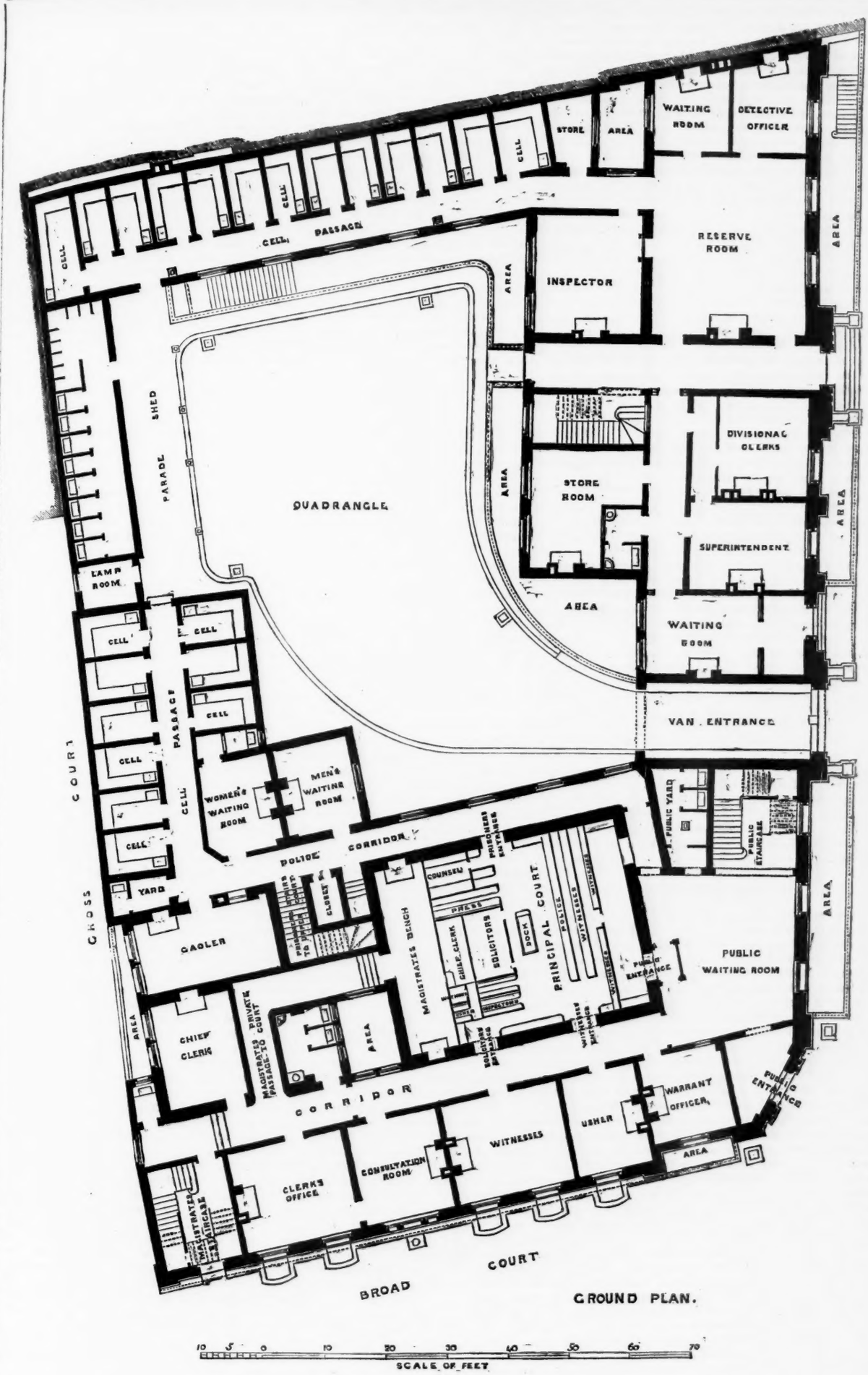
The building consists of a basement and three stories above the street level, with an additional story over the central division of the Bow-street front.

The courts are placed on the northern portion of the ground, secluded as far as may be from the noise of street traffic. The principal court is on the ground-floor, 40 ft. by 30 ft., and 26 ft. high, exlcusive of a large lantern light, with rooms for clerks, attorneys, witnesses, &c., next Broad-court, at the eastern end of which is the magistrates' entrance, leading by private passage to the bench, their private rooms and library, or consultation-room, being on the first-floor where is also placed the second court, 31 ft. by 23 ft., and 18 ft. high, with lantern over, intended for the hearing of extradition and other special cases. Other rooms on this floor are appropriated as offices, as well as some on the floor above, and the remainder as apartments for the court-keeper.

The public entrance is in the splayed angle to Bow-street and Broad-court, the staircase



THE BOW STREET POLICE COURTS.—MR. JOHN TAYLOR, ARCHITECT.



GROUND PLAN.

SCALE OF FEET

NEW POLICE COURTS AND STATION, BOW-STREET.

to the upper court being open to the waiting-room. Cells, prisoners' waiting-rooms, and gaolers' room are contiguous to the principal court, and a separate staircase for prisoners and police conducts to the court above.

The police station, which occupies the southern portion of the ground, comprises superintendents' offices, with distinct entrance; a reserve or charge room, with inspectors' and other rooms adjoining, and communicating by corridor with cells ranged along the south side of a large quadrangle, which has a van-entrance from Bow-street,—the cell-building attached to the court being connected with that of the station by a covered way, which will also serve as shelter for constables when parading for duty. A room on the east side of the quadrangle is provided with a door to Cross-court, for use when specially required. A mess-room, kitchen, lavatory, bath-room, &c., are located in the basement; a library and large recreation-room on the first floor; and other rooms on this floor and the two upper floors provide sleeping accommodation for 100 policemen.

The front next Bow-street, with its short return to Broad-court, which we illustrate in our present number, will be executed in Portland stone; the other part of the front to Broad-court, will have white Suffolk brick facing with Portland stone dressings.

Internally, with the exception of the courts and a few of the more important rooms on which some slight degree of ornamentation is bestowed, the building has been kept quite plain.

The cells, corridors, and rooms requiring frequent washing, will be paved with Claridge's Seyssel asphalte; the skirtings and portions of the walls will be executed in Keene's cement, and the floors throughout the building, with a few exceptions where brick arching is used, will be of Messrs. Dennett & Co.'s fireproof construction.

Special attention has been paid to the several sanitary arrangements, and the most approved modern appliances will be adopted. The drain and other pipes passing under the quadrangle and van-entrance are contained in a brick-arched subway, so that repairs can be effected without disturbing the paving.

Hot-water pipes will be laid to the courts, the cells attached thereto, the public waiting-room, &c., and warm air provided for the cells of the station.

The architect of the building is Mr. John Taylor, of H.M. Office of Works and Public Buildings; the contractors are Messrs. George Smith & Co., of Pimlico; and it is expected that the work, recently commenced, will be completed within eighteen months, at a total cost of 40,000*l.*

A TOUR ON THE CONTINENT.*

Renaissance Churches. — Among the large number of churches erected during the fifteenth and sixteenth centuries, I will select a few of those which attracted my notice. The grand schemes adopted for many of the Renaissance churches is a striking feature, and the use of domical coverings a rule scarcely departed from. I have already referred to Brunelleschi's dome at Florence; in the same city we find the Church of Santo Spirito, designed by the same architect, though erected after his death. A somewhat unusual plan is here adopted, viz., a Latin cross, with aisles and semicircular chapels all round, and circular dome at the crossing. Sta. Maria Formosa at Venice is a church with barrel-vaulted nave and transepts, domical aisles, and three apses. At Ferrara are a couple of churches with some pretence to notice, viz.: San Francesco and San Benedetto. The former has domical-covered nave-aisles and transepts, square side chapels, and an apse with two chapels on either side. San Benedetto has a nave and apsidal transepts, domical-covered aisles and apsidal side chapels, three eastern apses, a domed lantern at crossing, and the nave (except for a flat cupola) and transepts being barrel-vaulted. The Church of San Sisto Piacenza has a very effective plan, consisting of a barrel-vaulted nave, transepts, and choir, with dome at crossing; transept also at west end, with intersecting dome, and at the end of each of these transepts a chapel on the plan of a Greek cross covered by five cupolas. Each bay of aisle has a domical covering and an apsidal chapel. The choir is square, with an apsidal chapel on either side. The Church of SS. Annunziata, Florence, is rendered imposing by the large rotunda of the choir added to the church by Leone Battista Alberti; this is surrounded by apsidal chapels and crowned with a frescoed dome: it is much to be regretted, however, that owing to the lowness of the arch into the nave this dome loses a great deal of effect, as it cannot be seen unless quite near the rotunda. Bramante now comes upon the scene, and we have the commencement of S. Peter's, according to his design of a Greek cross. Pavia Cathedral is also said to have been designed by him: the fine central octagon is, however, incomplete; there is an apsidal choir and aisles, but only two bays of the nave are built. To Bramante is also attributed the erection of Sta. Maria della Campagna at Piacenza, a church having an effective plan based on a Greek cross; the arms are square-ended and barrel-vaulted; a domed lantern covers the centre, and smaller lanterns the corner chapels. Sta. Maria del' Umiltà at Pistoja is the work of a pupil of Bramante, who is credited with the design. It is a large octagonal building, covered with a dome, and is preceded by a large and effective barrel-vaulted vestibule, having a cupola in the centre. The Madonna della Steccata at Parma is after the model of S. Peter's, a Greek cross with aspidal-ended arms, a domed lantern in the centre, and domed octagonal chapels at angles. Sta. Giustina, Padua, the work of Andrea Briosco, is planned on a grand scale, there being eight cupolas besides the three domical vaults over the nave. It has nave and aisles with lateral chapels, the transepts and choir each terminating in three apses. The exterior of this, as well as so many other extensive churches, presents a dreadfully bare appearance, owing to its incompleteness. Sta. Maria in Carignano at Genoa, commenced in 1555, is another church based on Bramante's original design for S. Peter's, and occupies a commanding height above the sea,—a site worthier of a better exterior. Of the many works of Palladio, the churches of San Giorgio Maggiore and the Redentore at Venice are perhaps best known, the former on account of its prominent position on an island all to itself on the Grand Canal. The cruciform plan, with apsidal transepts and choir, and central dome, make a good interior, though it sadly lacks colour. The Redentore has no aisles, but a barrel-vaulted nave with apsidal-sided flanking chapels, and terminating in a large domed square with canted angles and apsidal-ended arms. Another prominent church in Venice is Sta. Maria della Salute, erected in the middle of the seventeenth cenutry, and consisting of a large domed octagon surrounded by an aisle with chapels, on the east of which is a domed square with an apse on each side.

In the seventeenth and eighteenth centuries we see in Rome, Modena, and elsewhere, several instances of churches constructed in the circular, octagonal, and elliptical forms, as well as on the Greek cross, while Turin and Naples have each an example of a church built at the beginning of this century on the model of the Pantheon. I think I have said sufficient about the arrangement of the Renaissance churches to show that they possess, at any rate, some interest in their planning, if their architecture is not such as we all admire; but I confess, for my own part, that the cleverness and ingenuity often displayed in some of these buildings frequently overcame my prejudice. No doubt the domical treatment is the chief fascination.

Foreign Influence.—Before leaving the subject of Italian churches, I will just refer to one or two exotics not previously noticed. The famous double church of San Francesco Assisi, erected in the thirteenth century, was the work of the German architect Jacopo, and exhibits a decided Northern character; while Milan Cathedral, of the fourteenth century, is said to be the work also of a German, or an Italian architect trained in Germany; certainly it bears little resemblance to Italian work, whether in plan, proportion, or detail. Genoa Cathedral, in some respects, has an affinity to French work; and, lastly, the thirteenth-century church of Sant' Andrea, Vercelli, with its square-ended choir and buttresses, is supposed, with good reason, to be the work of an Englishman, though Mr. Street considers that the exterior shows no trace of any but an Italian hand. As far as I am aware, there is no example of the French *chevet* in Italy, the nearest approach, perhaps, being the choir of Sant' Antonio, Padua.

French Churches.—And now let us briefly glance at the arrangement of the French churches. With a few notable exceptions, we shall find them following one main type, viz., the Latin cross and an apsidal choir: this comparatively simple plan has its varieties,—for instance, the choir aisles are frequently double, and sometimes the nave aisles; and not only do radiating chapels form a feature of the choir alone, but continuous lateral chapels often line the nave. Hence we have a grandly developed plan, such as we see at Notre Dame, Paris, Bourges Cathedral, Coutances Cathedral, Rouen Cathedral, and Tours Cathedral; or without nave chapels, as at Amiens and Chartres Cathedrals and S. Sernin, Toulouse, the latter being further developed by the addition of an aisle round three sides of each transept. At S. Nazaire, Carcassone, we have an example of a line of eastern chapels such as I have remarked in certain churches at Verona, Venice, and Florence; there are three on either side of the choir, and these were added to the transepts in the fourteenth century: they are separated from one another by open traceried divisions, and produce one of the most beautiful east ends I have seen. Bourges Cathedral should be noted as having no transepts,—a feature also dispensed with in Mantes Cathedral and in a few other churches; while some examples are found without aisles, notably Angers and Vannes Cathedrals, the latter of which has, however, side chapels. Dol Cathedral is noteworthy as possessing a square east end, while the cathedrals of Lyons and Vienna have an east apse, but the aisles terminating square. Further south, too, we observe that the aisles in S. Trophime, at Arles, are so reduced in width that they form mere passages. Another feature of considerable importance and much effect is the adoption of a lantern at the crossing; this is to be found at Blois S. Nicholas, Coutances Cathedral, the Abbaye aux Hommes at Caen, S. Pierre, Lisieux, Evreux, Avignon, and Le Puy Cathedrals, S. Martin d'Ainay at Lyons, and Notre Dame, Dijon. That at Blois is circular, Caen and Lisieux are square, and Coutances, Evreux, Le Puy, and Avignon octagonal. Internal effect is, perhaps, most sought, though the lofty lantern tower at Coutances is very pronounced externally. Now for a word on those churches which deviate more or less from the usual type.

French Domical Churches.—First and foremost is S. Front, Perigueux, said to be a copy of S. Mark's, Venice, or built by the same architect, the plan being that of a Greek cross surmounted by five cupolas. At the west end are the remains of an earlier church, over which stands a lofty and picturesque tower. The principal entrance is by the north transept, which is preceded by an open arcaded narthex. Each transept has a small eastern apsidal chapel. The east arm of the cross used to terminate in a fourteenth-century choir or apse; but this has evidently been removed, for there is now a new apse in the style of the original church, but much more elaborate, and not very satisfactory. And this leads me to express the greatest regret at the wholesale restoration which is being carried out here, by which an ancient and most beautiful church has been thoroughly transformed into a brand-new edifice. Happily, the old tower has not yet been touched, and long may it stand, adorned as it is by the charming hand of time, to bear witness and display a protest against the mistaken zeal of man. Perigueux has another domical church, formerly the cathedral, and now called *l'église de la cité*. Only two compartments remain, and these are of considerable span, about 50 ft., and each surmounted by a cupola. As in S. Front, the supporting arches are pointed, and though the point is barely discernible in some arches, yet it is quite established, and herein lies a distinction between these and S. Mark's, the arches of the latter being round. Probably when the *église de la cité* was complete, it was similar to the cathedral at Cahors, which has two domical compartments of about the same span, and an apsidal choir with three apsidal chapels, the supporting arches again being pointed. Le Puy Cathedral has a nave divided into six compartments, each surmounted by an octagonal cupola; in this case there are aisles and transepts, the latter peculiar, being divided into two parts by a pair of columns supporting a groined soffited gallery, the gable end terminating in two apses. The choir has now a square end, but this has been rebuilt for increased light and accommodation. At the crossing is a domed octagonal lantern rising out of a circular cupola. Owing to the steep slope on which the church is built, the entrance is contrived rather ingeniously. It is

* By Mr. Hampden W. Pratt. See p. 664, *ante*.

approached by a steep street, ending in a long flight of steps, at the top of which are three lofty arches. Passing through these you still ascend steps along a stepped vaulted corridor under the nave. At the end of this corridor is a wide doorway, which opens upon a flight of steps left and right,—the former leading to the cloister, and the latter to the church, which is eventually entered in the south aisle. It is supposed, however, that the original intention was to pass under the whole length of nave, and enter the church in front of the altar; and it is quite possible that such an entrance once existed, and that the present is a subsequent alteration. I may remind members that the memorial work to the late Mr. Sharpe on the "Charente" deals with an interesting district in France, somewhat allied to the domical buildings to which I have referred, and from the circular which has recently been sent to members of this Association, I gather that the committee are waiting for names of subscribers.

Fontevrault Abbey Church is not unlike Angoulême, although it is one bay or compartment longer than the latter, has a choir-aisle and three instead of four chapels to the apse. But, sad to say, the abbey buildings now form an extensive prison! The nave of the church has two upper floors inserted to make dormitories for the prisoners, the ground-floor being their refectory, while the transepts and choir remain for the chapel, and in a corner of the south transept are placed the recumbent figures of Henry II. and his queen, Richard I., and the widow of King John, their bones having long since been seized and scattered. S. Ours, at Loches, is certainly a unique church. It is of twelfth-century date, and consists of a nave in two square compartments, each of which is covered with a lofty octagonal conical cupola, open up to the apex, and perfectly plain. At the crossing there is a tower, which forms an octagonal cupola, with a circular light at the apex; transepts, with apsidal chapels and a small apsidal choir. At the west end is another tower, and west of this a large square narthex, with some fine Romanesque doorways. The exterior is certainly very singular, on account of the two lofty pyramids between the east and west towers, though taken in conjunction with the buildings surrounding the castle heights it is picturesque and striking.

Cloisters.—Neither in France nor in Italy do we see the beautiful cloisters with which we are so familiar in this country. There are, nevertheless, several interesting examples. They occupy sometimes a position on the north, but quite as often on the south side of the church, and uniformly possess arcades of small arches, mostly springing from double shafts; and though we miss the tracery, we have instead finely-sculptured capitals. On the north side of Le Puy Cathedral is an early and massively-treated unequal-sided cloister, one side of which is, I believe, of the tenth century, the others being of the twelfth. The round arches spring from square piers, with a detached shaft on each of the four sides of the pier; diapered tile-work, with light and dark voussoirs, are the materials used, and each arch has a head carved on the key-stone; the west side appears to have been carried up another story. On the north side of the Abbey Church of S. Pierre, Moissac (near Toulouse), is a beautiful twelfth century cloister, one of the piers bearing the date 1110. The arches are moulded and pointed, and spring alternately from single and double shafts; at each angle and in the centre of each side is a square sculptured pier. All the capitals are beautifully sculptured with Scriptural subjects, and have explanatory inscriptions attached. I do not admire the use of the single shaft when it sustains a capital large enough for two, though the idea of alternation is very effective. This is certainly one of the most remarkable cloisters I have seen, and, wonderful to say, it is in excellent condition, and without sign of restoration.

On the north side of San Zenone, Verona, is another early cloister, restored (according to an inscription) in 1123, but considered by Mr. Street to be at least fifty years later in date. The plain unmoulded arches are of brick, round on the north and south sides, and pointed on the east and west; they spring from coupled marble shafts, resting on a low stone wall. On the north side is a large square projection similarly arcaded, which once formed the lavatory. This is the only instance of a lavatory that I remember to have seen in France or Italy. On the south side of S. Trophime, Arles, is a beautiful early cloister, built at different periods, and in splendid preservation. On the north and east sides (twelfth century) there are three bays, each consisting of four round-arched arcades, supported on double columns, with finely-sculptured capitals, the piers between the bays being shafted, and the cloister having a barrel-vault with moulded transverse ribs springing from a moulded cornice, with sculptured corbels. The adjoining church, I may add, is, like a few others in France, barrel-vaulted, and the same way of covering the cloister is a particularly appropriate one. The angle piers are massive and sculptured. On the north side the wall is arcaded, and has fluted pilasters with detached angle-shafts. On the south and west sides (thirteenth century) are fourteen pointed arches, supported alternately on double columns, with sculptured caps and moulded piers taking thrust of groining ribs. These piers have square buttresses carried up to eaves. On the south side there are niches with canopies behind these piers, and at the south-east angle is a well.

On the south side of Montmajor Abbey Church, in the vicinity of Arles, is a massive twelfth-century cloister, each side of which is divided into three bays by heavy fluted piers, each bay having an arcade of four circular arches springing from double shafts with carved caps. This cloister has also a barrel-vault. At Mont S. Michel is one of the most charming cloisters I know,—built between 1220 and 1228, and with exquisite detail. It is, moreover, unique in the arrangement of its arcading, which consists of a series of double arches springing from single shafts, the columns of the inner arches coinciding with the centre of the outer arches. The arches are pointed and boldly moulded; the caps also are moulded, and have a circular abacus. The cornice inside and spandrels of arches are vigorously and beautifully carved; there is a good wall arcade. The whole is now being restored under M. Viollet-le-Duc, and the plaster ceiling is being removed, so as to show the rafters with their curved braces. The most beautiful Mediæval work at Rome is to be found in the thirteenth-century cloister attached to the Lateran Church. Here the arches are circular, and spring from twin shafts, many of which are twisted, and some inlaid with mosaics. The caps are richly carved, and a mosaic frieze is carried round the exterior. The arches have slight mouldings, and on the soffit are two flush quirked beads,—an effective relief to a broad arch. In the centre of the court is a well.

On the north side of the little church of San Matteo, Genoa, is a cloister bearing the date 1310: its plain pointed arches spring from coupled shafts with carved caps of an early French character. A cluster of four shafts takes the place of a pier at the angles. On the north side of the Church of the Augustins, Toulouse (now used as the Museum) is a very good fourteenth-century cloister, with traceried arches springing from double marble shafts, an unusual treatment being the introduction of tracery. The cloisters of the Certosa di Pavia may be mentioned as a rich example of the use of terra-cotta, but I think the adoption of a single and slender marble shaft is scarcely satisfactory, the use of iron ties (a frequent case in Italy) being necessitated. The Campo Santo at Pisa commenced in 1278 is a large rectangular cloister, 415 ft. long and 137 ft. wide; the continuous series of round arches were, however, not filled in with tracery till the fifteenth century. This open tracery is in four divisions, each bay alternating in design; and though it is of a rather hard and cast-iron character, the general effect is pleasing, owing, no doubt, to the size of the cloister, its beautiful frescoes, and the peep one gets of the cathedral. There is just one other cloister I must mention. It is attached to the disused Church of San Gregorio, Venice, and is peculiar, inasmuch as there are no arches; but we find instead slight marble shafts, 10 in. in diameter, and 7 ft. or 8 ft. apart, resting on a low wall, once very elaborately carved in marble, only a portion of which now remains. These columns carry a beam 8 in. deep and 11 in. thick, over each support being a curiously-notched bracket, spreading its bearing right and left. The pent roof has a good moulded and carved plate.

Towers, &c.—Having glanced at the arrangement of some of the churches, baptisteries, and cloisters, I had intended to say a few words about towers, which I suppose have a characteristic treatment in most countries. Italy, for instance, cannot be separated from its *campanili*, some of which are exceedingly striking. At Ravenna we see the oldest form, viz., the round towers. Pisa's celebrated round tower is an Italian landmark, and Giotto's tower at Florence is a charming piece of colour, although I have heard it profanely stigmatised as a gigantic piece of Tunbridge Wells ware. The *campanili* in the North and those of Pisan character, though not possessing very great variety, are, as a rule, of good proportion, and bold in treatment, and show what may be done without the use of the buttress. In France, we find the type of tower and spire with which we are not unfamiliar in this country, and I think I may say that one of the best-managed features of French spires is seen in the treatment of the broach and pinnacles. The low square tower, with which we in this country are acquainted, does not seem to find a place in Italy or France.

To the many beautiful pulpits, pavements, and other characteristic details, I cannot now allude, nor to the charming colour decoration which adorns so many Italian churches, especially the use of such a durable material as the mosaics which have for so many centuries withstood the ravages of time, and remain to-day the most beautiful specimens of permanent decoration which it is possible to employ. So in Ravenna, Venice, Rome, Florence, and Pompeii we must linger long if we would study the work in these golden shrines.

Lessons.—One cannot return from scenes so delightful and work so interesting without having gathered some lessons. From Italian brickwork we have especially much to learn. Some of its detail is most exquisite, and it seems surprising that this great brick country (England) should attempt so comparatively little out of the ordinary way. The use of marble we cannot expect to adopt much, and in some respects this may be an advantage; for the many systems of incrustation which such a valuable material necessitates would introduce us to a kind of construction scarcely to be commended. In many respects the Italian work displays a simplicity of parts, and consequent largeness of scale, which detracts from its appreciation, and this we may learn to avoid. Their groined buildings bear no comparison with the English and French, and their carving is rather disappointing. I refer particularly to capitals, and it seems strange that in a country (noted, by the way, for its figure sculpture) where the column is so largely employed, we should see such poverty of treatment. England, in this respect, must also lay claim to examples far more beautiful and artistic. Another Italian feature, and one that is not satisfactory, is the favourite adoption of a front or façade instead of a good all-round building. We see plenty of this in our modern work; but I think no one, except the stingy client, upholds the shabby-back style. In our churches I think we may be said to pay perhaps more attention to the exterior. The Italian usually reverses this order, and in this I think we have something to learn from one another. I might easily prolong comparisons; for a tour on the Continent opens one's eyes to varieties, defects, and beauties in different countries, each of which may be said to bear a national stamp. This is equally the case with our own country. We have our particular applications of common principles, and are not bound to a hard-and-fast line in these matters. With such freedom, then, let us not abuse it; and, having great opportunities, may we profit by international intercourse, and in so doing, while it will tend to develop our minds and influence our lives, it will assuredly be the means of promoting the happiness and well-being of our fellow-men.

In the discussion which followed,

Mr. R. Phené Spiers proposed a vote of thanks to Mr. Pratt for his interesting paper, which had covered so wide a field that it was difficult to know where to begin the discussion, time being so limited. Mr. Pratt had stated that the church of S. Front, at Perigueux, was supposed to have been a copy of S. Mark's at Venice, and S. Mark's, it should also be remembered, was supposed to be a copy of a church of the same name at Alexandria, which was afterwards destroyed; indeed, a great deal of the material of which S. Mark's was composed was supposed to come from Alexandria. On a close comparison of S. Mark's with S. Front a curious difference would be found between them. The two churches were of the same proportions, and the difference was due to the want of knowledge exhibited in S. Front. Perigueux, of the true construction of the Byzantine vault. Some writers had supposed that both buildings were

designed by the same architect, but the probability was that S. Front was by a French architect who had copied the plan of S. Mark's. The great difference between the two churches was that at S. Front the whole of the arches of the dome were pointed, whereas those of the dome of S. Mark's were round. Unfortunately, and to the irreparable loss of all students of architecture, the church of S. Front had of late years been completely "restored," in such a way as to completely blot out one of the most important chapters in the architectural history of France. If he recollected aright, the arches of the first dome of the nave in the unrestored building were very slightly pointed; but judging from the sketches made by the late Mr. Edmund Sharpe since the restoration, the arches were now distinctly pointed. M. Abadie, the architect for the restoration, probably considered that if the Byzantine architects had possessed the knowledge of modern architects they would never have used round arches, but would have used pointed arches. It was sincerely to be hoped that the tower would be left un-"restored."

Mr. Hugh Stannus seconded the vote of thanks, and by means of sketches in chalk on the blackboard, supplied some "annotations" to one or two points touched upon in Mr. Pratt's paper.

Mr. S. Flint Clarkson said that with reference to the restoration of S. Front, Perigueux, he understood that when M. Abadie undertook the task he found the building so near absolute ruin that it became a question whether the church could be maintained at all without rebuilding. It was decided that it was necessary to rebuild, and that decision having been arrived at, M. Abadie debated the question whether the church should be rebuilt exactly as it was, or whether, in the rebuilding, it should be brought back to the form that he believed it to have taken at some earlier period of its history. He resolved that he would, to the best of his ability, ascertain the original form of the church, and that he would then restore it to that condition and leave it for the instruction of future generations. What he had done he had done with the assuredness that it was the right thing to do.

Mr. E. B. l'Anson said he was glad that allusion had been made in the paper to some matters which were not always sufficiently considered by students, especially those brought up in the Gothic school. One such point was the extreme ingenuity of many of the plans of the Venetian churches,—such ingenuity of planning enabling the most awkward sites in crowded streets to be covered to the utmost possible advantage. Another matter well worthy of study was the brickwork of Italy, which was the finest in the world. Brickwork had of late been studied much more thoroughly than used to be the case, and he thought there was a great future open to its artistic employment if architects would only study it as a material *per se*, instead of running about from Stoke Newington to Walthamstow, and from Walthamstow to Clapham, to "crib" little bits of "Queen Anne" work.

Mr. Thomas Blashill said that Mr. Pratt had very well described what was to be gained by "a tour on the Continent," and he recommended other members of the Association to go over the same ground, or a portion of it, for themselves. His (Mr. Blashill's) advice to young architects was, Go abroad as soon as you can. Many people said,—"Make yourself well acquainted with English architectural works before you try the Continent." That advice was all very well in its way, but the man who was seeking to get the varied education needed for an architect should endeavour, as soon as he had got some acquaintance with English architecture, to take occasional short runs on the Continent. A two or three weeks' ramble in Brittany, Normandy, or Belgium would serve as a commencement. The great value of such papers as Mr. Pratt's was that they acted as incentives to other young architects to go and do something of the same sort themselves.

The vote of thanks was then put and carried, and Mr. Pratt having said a few words in reply, the last meeting of the Association for session 1878-79 was brought to a close by the election of officers for session 1879-80, as recorded by us last week (p. 662).

Newcastle-on-Tyne. — The School Board have requested Mr. Oliver, architect, of the firm of Messrs. Oliver & Leeson, to report upon the proposed enlargement of the extensive Board Schools at Westmoreland-road, in that town.

THE STAMFORD CHURCHES.*

WE mentioned, on page 624, *ante*, Mr. Neale's paper on this subject, and now give some portions of it, in a somewhat condensed form.

Plans of the Churches.—The parish churches of Stamford are five in number; and there is the church of St. Leonard's Priory, and part of the church of St. Paul's. The points of resemblance in the parish churches are,—(1) squareness of plan, short length of nave and aisles in relation to the width,—especially noticeable at St. Mary's, All Saints', and St. George's, a characteristic of well-designed town churches; (2) owing to the extension of the aisles through the whole length of the church, the plan becomes a simple parallelogram,—St. John's and St. Martin's are purely so, and All Saints' was at one time a simple rectangle on plan; (3) wide naves, with comparatively narrow aisles. St. Mary's and All Saints' are especially noticeable in this respect.

Original and Present Form of the Cross Section.—All the five churches are on ancient foundations. The favourite section in the thirteenth-century churches gave one large roof over the nave and aisles, without any clearstory or even a break, but frequently with a change of pitch. This is seen by means of the weather-moulds; for instance, in St. Martin's and St. Mary's. Now, each of the churches has a Perpendicular clearstory, — the latest addition. All the churches, perhaps with the single exception of St. John's, had passed through a succession of other changes before the time came for this final one, which so radically altered the form of the section. . . . . .

Towers and Spires.—There is a chronological sequence in these parts of the Stamford churches which I do not think has been remarked upon at length before. St. George's supplies a plain example on a not very large scale of an Early English unbuttressed tower, of which the most striking peculiarity is the short dimension from east to west, and the much larger dimension from north to south. St. Mary's is a splendid example of a very rich Early English tower, with shafted arcades in every one of its five stages, gracefully buttressed at the angles, and finished with a rich corbel-table, altogether one of the most notable towers in England; open to criticism, of course, but full of charm to those who see it for the first time, and to those who see it every day of their lives. The spire put on this Early English tower is early fourteenth-century work, with statues under canopies at the heads of the broaches, with three stages of crocketed spire-lights, with mouldings at the angles,—a characteristic example of well-developed Decorated. At about the same time the original fabric of St. George's was altered. Then comes an interval of a century, or a little more. The fine, very similar towers of St. John's and St. Martin's were probably erected a little before the middle of the fifteenth century, and All Saints', no doubt, must be dated at about fifteen to twenty years after 1450; for we know that it was erected after a considerable destruction had been wrought by the Lancastrian army in 1461. The designer,—who had to work upon it 150 years after the completion of the other majestic spire, which rises on the hill-side sloping gently from the northern bank of the Welland,—evidently determined to make use of all the resources of his art, and to produce a design which should contrast, at the same time that it harmonised, with the earlier work. The tower was not placed at the central west, like St. George's, St. Mary's, and St. Martin's, but thrown out at the north-west angle. This selection of the site gives proof of a good eye for effect, for the tower, seen above the main mass of the church from the river valley, and from the open space southwards, crowns with its pyramidal form the broad square building beneath it. This may be called the first point of contrast with the other churches, in which the towers appear to join themselves on to the naves, rather than to rise out of the bodies of the structures. As we must not dilate at too great length on the talent of our fifteenth-century brother, I will take it for granted that every one has appreciated the points which I omit to mention, and go on to note the most individual masses of pinnacle rising from the parapet at the base of the spire. At St. Mary's the broaches are slightly low in their angle. The architect of All Saints' noted this weakness, and the way he set his spire upon the tower is a clear proof that he had learned rightly his lesson from spreading shoulders beneath the column of the neck. The spire-lights of St. Mary's are, if one may venture to say so without personal risk, a little crowded and a little large. The architect at All Saints' brought his spire lights into such perfect relation with the spire, that they are never seen until they are looked for. This is the crowning glory of architectural design, when nothing is wanting, and no detail obtrudes, and the whole effect is felt to be just what the master who designed it aimed at; where no form, albeit in itself of extreme beauty, thrusts itself into undue prominence and destroys unity and repose,—apparently the simplest of requirements, but in real life all too rare. The upper windows in the towers of St. John's and St. Martin's, which are somewhat earlier than All Saints', are all arched on the same system,—two sub-arches are included under a great arch, and the bold central monial finds its way upwards through the spandrel between the arches. This spandrel is not pierced, and is kept well forward in relation to the wall-plane. By the whole arrangement a great expression of force is given to these remarkable windows. The architect of All Saints' did not miss the lesson that his predecessors had written in stone. He needed a grander window for his grander tower, a window wider in itself, much longer, more deeply moulded, with strong transom and rich tracery; but he did not forget the vertical monial in the head and the solid spandrels which should come appropriately below the base of the heavy spire. He showed by them that he was willing to teach with added force to future generations the lesson he had previously learnt himself in Stamford. But these general considerations, however tempting they seem, must be left incomplete, in order that I may describe, I fear in somewhat prosaic fashion, some few details.

The towers at St. John's and St. Martin's resemble each other so much that I think they were probably designed by the same architect. The battlemented parapets at St. Martin's are more elaborate than those at St. John's, but the latter may have been altered. Below the parapets there are the same enriched strings; the same windows in the belfry stages, in each case the monial continued to the top of the arch; in the next stage the windows are similar, and in the ringing-chambers there are similar square openings, each four-foiled. The lower stages vary slightly, but this is owing to the difference of situation. When St. Martin's tower was commenced (*c.* 1450-60) the old church was standing. The eastern arch of the tower was kept lower than it should have been, in order to bring it well within the limits of the old nave-roof. The weather-mould over the nave-roof remains, as well as a doorway which led from the tower on to the old roof. The lower stage of the tower reaching upwards as far as the four-foiled windows formed a porch, the main entrance of the church. The roof of this porch was vaulted with moulded stone ribs; the vaulting has been destroyed, but the springers exist. Similarly vaulted porches exist also at All Saints' and St. Mary's, but that at St. Mary's was not part of the original design, as at St. Martin's, having been introduced in the fifteenth century.

In passing from St. Martin's, in the county of Northampton, over the bridge into the county of Lincoln, the grand tower and spire of St. Mary's stands before us, long a favourite subject with artists. The tower has not solid plain walling on its lower stages, as at St. Martin's and St. John's, which stand on level ground, but, as the hill forms here the foreground,—in effect a broad base to the tower,—the architect ventured on the omission of a boldly-constructed basement, and started elaborate detail at once. This treatment has, by some critics (Mr. E. A. Freeman, for instance) been condemned, and I grant that it is a precedent that could but rarely be followed, for the site is of a very rare kind. On the west, where no rising ground intervenes, the tower is made more solid on its lower stage, and the plinths, doorway, and buttresses deserve careful study. The whole tower is of the Early English period from the ground to the corbel-table. Time elapsed when this stage was reached before the spire was commenced. The lower spire-lights have ogee arches, tracery, flowers, and crockets, of good Decorated character. The changing style did not as yet demand pinnacles in lieu of simple broaches, or crockets, on a spire of this magni-

* By Mr. J. Neale, F.S.A., architect. Read at the meeting of the Associated Architectural Societies of Lincolnshire, Northamptonshire, and Leicestershire, held at Stamford.

tude and importance. The outline of an ordinary Early English broached spire was retained. In the fifteenth century, when much of the church was rebuilt, the interior of the lower stage of the tower was covered with vaulting, so as to make a more important portal. The vaulting ribs are not of the usual kind; the diagonal ribs are very broad arches, with the soffits on one plane; and panels sunk from this plane enrich these characteristic soffits with cusps and tracery. This vaulting is similar in design and date to that in the tower of All Saints, which is, however, more elaborate in detail and of better workmanship. In the western doorway of the tower there is a semi-circular arch, introduced beneath a pointed arch. This has been incorrectly described by various writers as a late alteration. The architect had ventured to propose a pointed doorway wholly open. At this time people were accustomed to see a solid tympanum, and we may well imagine the fear that the open pointed arch, without any tympanum, would let the tower down. Therefore the architect, somewhat in sorrow, effected a compromise,—still keeping his pointed arch, but introducing below it a semicircular one, and filling in the space between the two with masonry. Some eighty years ago another archway was inserted, so as to obtain a still greater mass of masonry. In the year 1789 the tower is said to have shown signs of cracking, and it was banded with iron at three stages. Two bands were fixed at the junction of the tower and spire, two just below the belfry sill, and one across the ringing-chamber arcade. These bands are arranged very clumsily. Parts of the moulded arcading were hacked away to allow them to pass. They cost 203*l*. A cynical friend has suggested that the churchwardens must have had relatives among the ironworkers. The tower should be examined, and these unsightly bands tested, to see whether they are of any material use; if they are not, they should be removed forthwith. Before doing so it would be well to fill in thoroughly all the settlements at the various stages with liquid cement, and to introduce bonding-stones where necessary, especially internally. Then the filling in could be removed from the belfry windows, the tower arches, the western doorway, &c. The tower might, with proper care, be made structurally even more safe than it is now. . . . .

[The paper proceeded to deal with the other parts of the churches, working eastwards from the towers. After the fabrics the details came in for notice, and we extract two of the summaries.]

Screens.—The chancel screen of St. John's seems to have remained *in situ* from the time of the removal of the rood until the late restoration. It was then removed and used to form a vestry. The screen is good in design and workmanship. It is the only Mediæval chancel screen existing in any church in the town,—the only specimen of ancient wood carving, and thus an important part of the history of the art of the district. The removal of the screen from its original position is to be regretted. I hope that ere long it will be replaced, for æsthetically it would be a great improvement to the interior of the church, giving scale and a richness now much wanted. There is another screen in Stamford, and a very notable one, still in its original position in the chapel of Browne's Hospital. These screens are of about the same date, and have many points of resemblance in their details. Screens were no doubt carried across the chancel arch, and the two arches on the north and south of it, at St. Martin's, though every vestige has now disappeared. The means of access to the gallery in the chancel arch are still to be seen; the staircase is in the north aisle wall. The doorway into the staircase from the church is quite perfect, and the openings in the nave walls still form odd and picturesque features. The same arrangement of a rood staircase in the aisle wall exists at St. Mary's, in the north aisle, and at All Saints' in the south. The sixteenth-century work in the screen across the north and south aisles of St. John's is particularly piquant to one's curiosity in these days, when so much work of this date has unfortunately disappeared from our churches. To observe the way in which the workmen of one age imitate the details, as well as the general character, of earlier work, is always a fascinating employment for an architect; not, I am afraid, that he feels it to be quite a virtuous one when the copyer is a good deal the inferior workman, as most frequently happened late in the sixteenth and in the seventeenth century, when the attempt was made to carry out Gothic traceries and carvings.

Painted Glass.—Some of the glass in St. Martin's Church is good in drawing, colour, and detail. It is evident, however, that it is not all by the same artist; three or four different hands are discernible. It was collected from Tattershall, Snape, and other places; and seems, by the bye, to lose some of its special interest when this is known. It might, indeed, deceive an antiquary who endeavoured to work out in detail the various schools of art in Mediæval England, as, let us hope, some antiquary will faithfully do some day. If a record in the church stated where the glass was brought from it would be a provision for future students, most valuable in another generation. At St. George's there are some quarries bearing the garter, and the motto, Hony soyt qu mal y pense. They are now collected and arranged in the window on the north side of the chancel, and were no doubt the gift of the family of William Bruges (or Burges), a great benefactor of this church, and the first Garter King-at-Arms. His will was dated February 26th, 1449. On the opposite window are some good specimens of glass; the principal subject is St. Anne teaching the Virgin. Some heads of Perpendicular windows at St. John's are well worth looking at, being fair samples of fifteenth-century glass painting, the only phase of the art represented at all fully at Stamford. At Browne's Hospital it is represented in a very magnificent way. The chapel windows, which are fine four-light windows, are filled with glass worth a pilgrimage to see. This is not the whole of the glass either in that most interesting building, that record in stone of the liberality and kindly feeling of the old world, which has been preserved unaltered in a way which is almost a marvel, and doubled in size of late years by a skilful architect, without detracting from its power of carrying us back to the time before Bosworth Field was fought. The glass in the hall is as excellent as that in the chapel. The semi-transparency and the semi-opacity,—the power to temper the strongest sunlight and to transmit the gentle light from an underlighted sky on wintry afternoons,—were good qualities in the material which the artist worked upon in colour, shaped to his will, and surrounded with leadwork, so skilfully that he supplied, in the most perfect way, by that necessary framework, the strong black lines which were required, in order that the painted subjects should cut themselves out of the background, and be sufficiently enriched throughout their surfaces. The gem-like character of portions of the glass, such as the ruby inlays in the crowns, and the sapphire-like jewels elsewhere, would deserve a lengthened notice; for there is much to remark as to the sections of the glass, the tilting of the planes of it, the occurrence of double glass at certain points, and other refinements. I will by preference turn from these devices of the skilful artisan to some other characteristics, such as the castigated purity of outline, the virile energy of the drawing, the absolute command of rich and glowing colour, and the self-restraint which gives value by mere omission,—all the best characteristics, indeed, of the best examples of the art. I am somewhat startled myself at these strong expressions about work which some may think too small in superficial dimensions to be treated to any hearty eulogy. I am, however, inclined to think that, being unable to say anything in favour of most of the modern glass at Stamford, the least that I can do is to make some amends by saying all that I feel, after long study there, of the exquisite work of the times that are past.

Healthy Hastings.—The Medical Officer of Health for Hastings, Mr. Chas. Ashenden, in his May report, says,—The death-rate is 15·33 per thousand of the population (38,780); twenty-one of these deaths occurred amongst visitors, and the total number also includes nine who died in the Infirmary and the Workhouse. He adds,—"The Registrar-General reports the annual birth-rate in England and Wales during the quarter equal to 36·5 per thousand, and the death-rate 25·2. He 'notes' Hastings as showing the *lowest death-rate* of fifty towns, viz., 17·5. The difference between the Registrar-General's calculation and my own, as I have before had occasion to remind you, is caused by his mortality returns embracing all the outlying parishes of the Union."

THE ARTISTS' BENEVOLENT FUND.

THE seventieth anniversary festival of the Artists' Benevolent Fund was held on Saturday evening last, in the large hall of the Freemasons' Tavern, Mr. George Augustus Sala in the chair. About 150 ladies and gentlemen were present. The Artists' Fund was established in 1810, and received, in 1827, from King George IV., its patron, a charter of incorporation. It has for many years enjoyed the patronage of her Majesty the Queen, who this year, for the fortieth time, sent her annual donation of one hundred guineas. The Fund consists of two separate and distinct branches, "The Artists' *Annuity* Fund," and "The Artists' *Benevolent* Fund." The *Annuity* Fund is raised and wholly supported by the contributions of its members for their own relief in sickness or old age; it neither asks for nor receives any support from the public. All artists, whether painters, sculptors, architects, or engravers, are eligible to become members. The Artists' *Benevolent* Fund, on the other hand, is a strictly charitable society, and has for its object the relief of such of the widows and orphans of members of the Artists' Annuity Fund as are left in need. It is supported by the donations and subscriptions of the patrons of the fine arts and artists, and the annual contributions of the members of the Annuity Fund. The claims of all widows and orphans who become entitled to its benefits are admitted at once, and without limit as to number. During the past year fifty-six widows and sixteen orphans received annuities, amounting in the whole to 1,176*l*. To each widow 20*l*. per year is paid, and 5*l*. per year is allowed for each orphan under the age of sixteen. The committee would gladly increase these allowances if the support of the public would enable them to do so. Since the institution of the society the sum of 40,445*l*. has been distributed in relieving widows and orphans of artists.

The Chairman, in proposing the toast of "The Queen," spoke of her Majesty as the munificent patroness of the Artists' Benevolent Fund. An artist herself, her Majesty had transmitted to her offspring that artistic faculty by which so many of their number were distinguished.

The toast was enthusiastically received, as was the succeeding one, "The Prince and Princess of Wales, and the other Members of the Royal Family."

In proposing the next toast, "The Army and Navy, Militia, and Volunteers," the Chairman said that many great artists had gained renown, and justly so, by illustrating the military exploits of England. Not to mention the works of Benjamin West, Loutherbourg, or John Singleton Copley, we had in the present day, artists like Mr. T. Jones Barker, Mr. Armitage, and Mrs. Butler,—better known, perhaps, as Miss Elizabeth Thompson,—who were all eminent as painters of military subjects. With the toast he coupled the names of General Lord Mark Kerr, Captain Hight (of the Royal Naval Reserve), and Major Adams, who responded for the Army, Navy, and Volunteers respectively.

The Chairman, in proposing the toast of the evening, "Prosperity to the Artists' Benevolent Fund," said that he approached with some degree of tremor the most important business of the evening, and in addressing himself to his task he did so in all truth and sincerity. His object was that which was the object of the illustrious Lord Bacon in pursuing his philosophical researches,—fruit. His object,—his design,—was to obtain cash, and he would advise the officers of the Mendicity Society, of the Charity Organisation Society, and of other societies which were endeavouring to stop or control the exercise of Samaritan virtues, to keep a very sharp eye upon him, for he intended to be a beggar, and a sturdy one, in aid of the Artists' Benevolent Fund. He would trouble the company with a few plain words of a business-like nature, in order that he might not be accused, while begging, of attempting to obtain money by false pretences. The Artists' Benevolent Fund was established in the year 1810, and in 1827 it received a royal charter of incorporation from George IV., who was always a very liberal supporter and patron of the fine arts. For many years it had had for its patroness her most gracious Majesty the Queen. The Society, it should be understood, was divided into two distinct and independent sections. There was, firstly, the Artists' Annuity Fund, to which artists, whether painters, sculptors, architects, or engravers were, after

due examination, admitted as subscribers; and then there was the Benevolent, or Widows and Orphans' Fund. The first section was a self-supporting institution, and only subscribing artists could participate in its benefits. The second section was a charity designed to extend assistance to the widows and orphans of artists, and that charity he called upon the company heartily to support by their subscriptions and donations. There was no man in that room who loved art with a sincerer and more thoroughly-devoted affection than he did, and there was no man who had seen with greater pride and gratification the growth, development, and increasing prosperity of so noble and high-minded a profession as that of art. Nothing did him more good than to know that artists were progressing, that their gains were increasing,—that they got thousands where they once got hundreds, and hundreds where they once got fifties, twenties, or tens; and that they were releasing themselves from the bondage of the picture-dealer and the patronage of the pawnbroker. For many once struggling artists such dark days were gone, never, he hoped, to return. He was not unaware that in times gone by the careers of the great painters, of the princes of the pencil, had been splendid. Leonardo da Vinci expired in the arms of Francis I. On the brow of the dying Raffaelle Sanzio was laid the benison of the Supreme Pontiff, and when the great painter had breathed his last his immortal picture of the Transfiguration was placed at the head of his bed, and his ashes were laid in a sepulchre worthy of them,—the Pantheon of Agrippa. Charles V. of Spain, emperor and king, picked up the pencil from the hand of Titian, but ere he had seen the great Venetian he had in Flanders gazed on some of his pictures, and said, "Let Titian be made an earl and knight," and he made him so forthwith. Even the ferocious Henry VIII. could feel admiration for a great painter, for he said that out of seven ploughmen he could make seven lords, although out of seven lords he could not make one Hans Holbein. Sir Peter Paul Rubens rode with twenty gentlemen in his train. Sir Anthony Vandyck immortalised on canvas all that was gallant, reverent, and wise among Englishmen, and all that was graceful and beautiful among Englishwomen. In the Royal Hall at Whitehall the King embraced him and hung the badge of knighthood around his neck; the royal barge conveyed him to his lodging at Blackfriars, where alas! he died,—too soon for friendship, but not for fame,—and his body was entombed in St. Paul's Cathedral, where now slumbered all that was mortal of Reynolds, Turner, Landseer, and other great artists. Such were the princes of the pencil who had passed through the great archway, who had made their stately progress to the Temple of Fame. But there was a *Via Dolorosa* as well as a *Via Triumphalis*. There was a heavy hill to be passed, and, fainting by the wayside, dejected, weary, and worn, were those who had been worsted in the great struggle, — the destitute, despairing, and poverty-stricken professors of art,—for it was not given to all artists to attain wealth, or even a competence, by their calling. In youth they might have had a competence and enjoyed a celebrity which was next door to fame, but that which came to all, disease, stepped in, bringing in its train poverty. The palsied hand refused any longer to obey the inspiration of the mind; the once bright eye was dim and glassy; and the once well-known artist faded into obscurity, and in course of time faded out of life, leaving a poor widow, and perhaps several children, to bewail his loss, but, thank Goodness! to look to the Artists' Benevolent Fund and to a kindred society for compassion and assistance. None were so prosperous, few were so happy, but that they might be exposed at any time to misfortune; and therefore every man, while he had the means,—and every man had the means to do good if he would only exercise a little self-denial,—should do what he could to help his fellow-men. He hoped he had clearly placed before the company the scope and purpose of the admirable institution for which he had been pleading, and that his words had conduced towards touching their hearts and loosening their purse-strings. With the toast he begged to couple the name of Mr. James Fahey, president of the Artists' Annuity Fund. (The toast was enthusiastically received.)

Mr. Fahey, in responding, said he felt highly honoured by the association of his name with the toast of the evening, and he also felt it a great honour to occupy the position of president of the Artists' Annuity Fund, which, as the chairman had stated, enabled artists to make some provision for their wants in sickness and old age.

The Chairman, in proposing the toast of "The Fine Arts," said it was satisfactory to note the present condition of English art. On every side art ideas were becoming more and more prevalent, and we saw art successfully pursued, not alone on the walls of our picture galleries, but in almost every department of industry. The improved state of industrial art was largely due to the influence of the late Prince Consort,—to his acute perception and exquisitely cultivated taste in art, and to his unwearied devotion in connexion with the Exhibition of 1851, from which period dated the vast improvements which had been effected in industrial art generally. The Royal Academy had no doubt done a great deal of good for art, according to its lights and according to its peculiar constitution and the traditions which it had received from the last century; and that which the Royal Academy, through no fault of its own, failed in doing, was being done by the schools of art at South Kensington and elsewhere. With the toast he intended to associate the names of Sir Rutherford Alcock and Mr. Edmund Yates. Sir Rutherford Alcock added to his attainments as a scholar and a diplomatist an exquisite taste and judgment in matters of art. Mr. Yates was also known to possess an admirable taste in art. The journal which he represented was entirely and thoroughly a friend of artists. The journalist was intimately associated with the artist. It was not in his power to make or break him, but it was in his power to assist him in his onward course, and by judicious criticism and judicious praise or blame he might prove to be the artist's best friend.

Sir Rutherford Alcock, in responding, said the only claim he could make to be listened to for one moment in responding to the toast of "The Fine Arts," was that he was a sincere lover of art in every possible form and shape. He believed that nothing more ennobled a nation, nothing offered it a more certain immortality, than perfection in art. Perhaps another reason why he had been unworthily chosen to respond to the toast was that many years ago, when he was in Japan, he became acquainted with the exquisite taste in decorative art possessed by the people of that country, and this taste he had the opportunity of bringing to the knowledge of the British public through the medium of the Exhibition of 1862. That seemed to him at the time to be a small service, but he little thought of the influence it would have. When, a few years afterwards, he returned to Europe, he was surprised to find how popular Japanese art was, not only in London, but in Paris, Vienna, and Berlin. It seemed to have taken possession of the whole of the imaginative mind of Europe by its intrinsic excellence and originality. He was very glad to see the influence it had exerted, and although no nation could make any large advance in art by merely copying the art of other nations, yet the student of the art of other nations would receive suggestions which could not fail to be of the greatest value to him.

Mr. Edmund Yates said he was at a loss to know why he should be singled out to respond for "The Fine Arts" when so able an artist as Mr. Eyre Crowe was present. But he yielded to no one in his reverence for and appreciation of art. He felt quite sure that those artists who had the pleasure of being criticised by the journals would feel that although occasionally they differed from what journalists said of them and their works, it was only because, on such occasions, journalists could not agree with the artists' views of themselves. When the journalist praised the artist and his work, then there was nothing so admirable as criticism; when praise was withheld or blame accorded, then there were no persons so vile as the critics. But as a journalist he assured artists that when the critic was most severe it was only his fun. The critic meant no harm to the artist,—on the contrary, he wished him all possible good. Possibly, as had been suggested, the critics knew little or nothing about what they wrote. In conclusion, Mr. Yates congratulated the company on their chairman, than whom, he said, no one wrote more genially and with greater appreciation of art and artists.

The Chairman next proposed "The Honorary Physicians and Medical Officers," coupled with the name of Dr. Symes Thompson, who briefly responded, testifying to the benificent operations of the Benevolent Fund.

The Secretary (Mr. Lambton Young) then announced subscriptions, donations, and legacies, amounting in all to about 1,700*l.*, including a donation of 105*l.* from her Majesty the Queen, a donation of 50*l.* given by the members of the Annuity Fund, and legacies of 1,000*l.* bequeathed by the late Mr. John Johnson, architect, 100*l.* by Miss Creswick (sister of the late Thomas Creswick, R.A.), and 50*l.* by Miss Maw-Egley.

The remaining toasts were "The Visitors," coupled with the names of Mr. Alderman Cotton, M.P., M. Gennadius, the Greek *chargé d'affaires*, and Mr. Eugene Schuyler, United States consul-general at Birmingham, who severally responded; "The Chairman," proposed in eloquent terms by Dr. B. W. Richardson; and "The Ladies," proposed by Mr. Alderman Cotton.

During the evening a selection of music was given under the direction of Mr. Lawler, the artistes being Miss Agnes Larkcom, Madame Harriette Lee, Mr. Sidney Tower, and Mr. F. Cozens (at the pianoforte).

THE SITE FOR THE BERMONDSEY NEW VESTRY HALL.

THE Bermondsey Vestry have decided upon negotiating for the purchase of a site for the new Vestry-hall, at a cost of 12,000*l.* They had originally fixed upon a site in Blue Anchor-lane, and when recently this land was offered for public sale they bid 6,000*l.* for it, but they were outbid, as it now appears, by one of their own valuation committee, who purchased it. The site now fixed upon is the tan-yard and premises lately in the occupation of Messrs. Barrow & Sons, which a short time ago was offered to them for 12,000*l.*, but it now seems, as was stated at the meeting of the Vestry last week, that Mr. Barrow has since informed them that he cannot sell the freehold land and plant for less than 12,500*l.* This demand was rather freely commented upon at the meeting of the vestry, Mr. Abbott remarking that the action of Mr. Barrow was scarcely business-like. In the first instance he offered to sell the freehold for 12,000*l.*, and as soon as the committee had come to the conclusion that it was a proper site to place the new Vestry-hall upon, he raised the price to 12,500*l.* In the course of the discussion alternative sites were suggested, but Mr. Willett, one of the members, observed that by purchasing the land which was near to the baths and wash-houses, they brought their premises together; and a further advantage was the tidal culvert on these premises, which would greatly reduce the expenditure for water. Mr. Porter also remarked that the position was a central one, and the value of the tidal culvert would be very great. He regretted, however, that Mr. Barrow should have receded from his position, and hoped the vestry would not accede to his last demand. Mr. Priter said the total area of the ground was 9,400 square feet, and, therefore, he did not think the price extravagant. The place was central, and doubtless would meet every requirement. From a consideration of the charge, he estimated the buildings on the land to be worth 4,000*l.*, and 8,000*l.* was about the net cost of the ground. If the vestry were to buy a site at all, this, he considered, was the one most available. It was ultimately agreed to continue the negotiations with Mr. Barrow, on the basis of purchasing the site for 12,000*l.*

THE LAST OF TEMPLE BAR.

SATURDAY last saw the removal of the last remaining stone of old Temple Bar, unless we are to accept the impression entertained by some as correct, that the foundation-stone is yet there undisturbed. At all events, the south archway and piers adjoining the old building, known as Child's Bank, have been razed to the ground within the last few days, and the stones forming the structure, duly numbered, have been carted away to the Farringdon-road depôt, and placed by the side of the material forming the rest of the "Bar," where they will no doubt remain until the Corporation decide upon the site for the re-erection of the old structure, which it appears the City authorities contemplate. At the north-west corner of the south archway, however, on the Strand side, some feet below the street level, one stone still remains, and there seems to be a popular belief that this is the foundation-stone. The footway

immediately under the spot where the south arch and piers stood has been excavated to some depth below the street level, and on Monday last was temporarily covered over with wooden planking. We understand that in making the footpath good and permanent the Corporation will show the outlines of the site upon which the "Bar" stood, uniform with those which are shown on the north side.

CONDITION OF THE GATEWAY AT BAALBEC.

IN a previous letter from Beyrout I mentioned the much-needed repair, which should be undertaken shortly, to preserve the magnificent gateway of the so-called Temple of the Sun at Baalbec. It will be remembered that the central stone of the richly-sculptured architrave was displaced by the shock of an earthquake in 1759, and subsided several feet, about half its own thickness, in which position it has remained suspended, its great weight being retained in position solely by the grip of the remaining huge stones of the architrave, one of which has been also shifted a few inches horizontally. The least tremor of any future earthquake was liable to bring the whole of this unstable equilibrium to the ground, and Capt. R. Burton, when consul at Damascus, very wisely supported this valuable relic so as to render the structure secure for the present.

I proposed either the substitution of light iron pillars by way of support, or the actual rehabilitation of the stones of the lintel as a by no means difficult or expensive piece of engineering, and advocated a subscription being raised for the purpose. Since my letter, I have had the opportunity of discussing the matter with an executive officer of the Public Works Department in India, viz., Capt. Harry C. Fox, Royal Engineers, who very kindly gave me the following memorandum on the subject:—

> "*Memorandum* as to a method which might be adopted for the restoration to its original place of the keystone of the flat arch over the doorway of the Temple of the Sun at Baalbec.

The present condition of the doorway from a structural point of view is as follows:—The jambs are built of very large stones placed on end and not bonded into the adjoining walls. The north jamb appears to retain its original position, and to be as firm as ever it was, but the south jamb, the stones of which have become damaged, does not seem stable, as far as can be judged from the photograph.

The lintel is composed of three stones forming a flat arch. The side stone over the northern jamb has slidden on its bed in such a manner that it has allowed the keystone to drop out of its original position a vertical distance of about 3 ft.; at the same time, the faces of the stones of the jamb and flat arch have preserved their original position with respect to vertical planes, i.e., none of the stones appear to be leaning outward from the faces of the wall in which the doorway has been made. A pillar of roughly squared stone has lately been built under the keystone to prevent its further subsidence. The lintel arch does not appear to have to sustain more than a light load in addition to its own weight.

To restore the flat arch of the doorway it would be necessary,—

1st. To raise the key-stone vertically about 3 ft. to its original place.

2nd. To restore to its original bed the side lintel-stone which rests on the north jamb, so that this stone might again support the key-stone when the latter had been raised.

There would be but little difficulty in carrying out the first operation, which might be conducted as follows:—

The top course of stones of the supporting pillar would be removed on two opposite sides, and in the spaces thus formed below the big stone would be placed timber beams, the ends of which would project sufficiently to allow of these beams being lifted by screw jacks; the screw jacks would rest on scaffolding or temporary masonry pillars.

The weight of the key-stone is probably not more than six tons, and this weight could easily be raised by four small bottle screw-jacks, which could easily be brought from Beyrout, and might possibly be borrowed from the shipping at that port. As soon as the key-stone reached its original position the supporting pillar should be built up to support it.

It might be necessary to support the lintels during the above operation; and, if so, they could be easily propped by timber struts from the tops of the temporary pillars.

If nothing more than raising the key-stone were done, the appearance of the doorway would be very greatly improved, and the more so if the whole of the doorway were filled with masonry in addition to the pillar which would support the key-stone [but as the soffit* of the lintel is sculptured, it is no doubt desirable that the whole of the soffit should be exposed to view, and to that end operation number two, as specified above, might be undertaken.]

If the key-stone were raised there would be a space of some inches between it and the side lintel stones. The key-stone, however, should be placed to touch the south lintel stone, which has not slipped, and the north stone might then probably be brought up to touch the key-stone by means of traversing screw-jacks, or possibly by wedging it out from the masonry at its end.

It is obvious, however, from the original failure of this arch, that something must be done to retain the three stones of the arch in their proper places; something, in this respect, no doubt, might be effected, after they had been readjusted by 'running' the joints between them and repairing the adjacent masonry with Portland cement, but it would also no doubt be necessary, either to support the lintel by iron girders placed across the opening under the lintel or preferably, as it were, to hang the three lintel stones from a girder placed over them, and itself long enough to have a good bearing on the adjoining walling. The latter arrangement, though perhaps more expensive than the former, would be better, inasmuch as the girder would not hide the sculpture on the soffit of the lintel. The girder should be of cast-iron, and the lintel stones would be hung from it by means of lewis-bolts. The cost of such a work in India would not probably exceed one thousand rupees, say 100*l.*

HARRY C. FOX, Capt. R.E."

There are few travellers, especially antiquaries, who would not wish to see such a work accomplished; and it would be worth while for those interested to get a more detailed report, with dimensions and quantities, from some experienced architect.

Much remains to be done in the way of discovery among these ancient remains, which at present are remarkably deficient in inscriptions. If Mr. Wood would do for Baalbec what he has done for Ephesus, he would add a vast amount of information to our at present but scanty lore of hieropolitan history.

S. P. OLIVER, F.S.A.,
Captain late Royal Artillery.

Off Brindisi.

* The *soffit*, or lower side of the architrave; the under surface of these lintel stones is lavishly enriched with vine wreaths and emblematical figures in relief, and the great object of the restoration would be to preserve the effect of the whole design from beneath.

THE WESTMINSTER CLOCK TOWER.

THE dials and hands of the clock-tower at Westminster are about to undergo a process of restoration, and the necessary preliminary work has just been entered upon. It is now something like twenty years since the hands of the dial of the great clock were examined, and it has for some time past been felt by the Government authorities that they possibly have become corroded, and might at any time fall, the result of which would probably involve considerable damage as well as personal danger. This will be apparent when the dimensions and weight of the hands are taken into consideration. The length of the minute-hands of the several dials, from the central point to the figures, is 14 ft. 6 in., and the length of the hour-hands 8 ft. 2 in.; but in the case of both hands there is an additional length receding beyond the pivot to the extent of some feet, and the hands on the different dials are of great weight.

It has been decided to re-gild and decorate all the dials, and also to make all the necessary repairs in the opal glass. With a view of ascertaining the condition and safety or otherwise of the hands, Mr. Dent, the maker of the clock, accompanied by several scientific and professional gentlemen, made an inspection of them on Tuesday week, and examined them closely. The result is that the hands are to be taken down and removed to Mr. Dent's establishment, where they will be tested, and, if necessary, repaired and restored. The hands of the whole of the dials will not be removed at once, but those on each dial in succession, there being no interference whatever with the working of the clock during the process. The hands on the south dial were removed on the 13th inst., and none of those on the other dials will be disturbed until those belonging to the south dial are replaced.

We understand that for the purpose of re-gilding the dials, Mr. Jones, who is acting as clerk of the works, has invented a new piece of machinery and staging for the workmen to stand upon. This is the first time it has been in use, and we learn that Mr. Jones has patented the invention. The restorations will be carried out under the superintendence of her Majesty's Office of Works.

GREENOCK MUNICIPAL BUILDINGS COMPETITION.

IN spite of the unworthy offer of only 4 per cent. commission to the successful competitor, no fewer than fifty architects have sent in designs for these buildings. The Corporation have called in Mr. Charles Barry, F.S.A., to advise them in the selection of the design to be adopted, and those to receive the two premiums offered.

The disastrous example set by the Corporation of cutting down architects' pay, with all its attendant evils and temptations, is much to be deplored and deprecated.

CITY OF LONDON SCHOOL.

AT a meeting of the Court of Common Council, on the 12th inst., a question was asked as to throwing open for the inspection of the public the exhibition of designs for the suggested new school. Mr. G. M. Felton, the chairman of the school committee, said he had received no notice of this question, but he might say that the committee had not felt themselves justified in throwing open the designs to the public. They belonged to the competitors, who had spent much trouble and pains on them. Without their leave it would be an injustice to them to exhibit the plans. As to the names of competitors being announced, he was surprised to see them in the newspapers; they might be correct or not. In answer to Mr. Edmeston, who asked if it was the intention of the committee, with the consent of the competitors (which he thought it quite unnecessary to seek, as it was not likely they would object), to exhibit the designs. Mr. Felton said that the reference to the committee was to consider the plans. They held that to be their duty; and that it was not their province to throw them open to the public, so that the Press might discuss them, and the Committee be led one way or the other by leading articles. As to the canvassing of competitors, Mr. Felton stated that he could only speak for himself, and he could declare, on his honour, that at no time, directly or indirectly, had he been canvassed by any competitor.

We may hope that now the committee have "considered the plans," and are, therefore, no longer in danger from counsel given by the public and the Press,—the exhibition may be opened without delay, and the fullest criticism of the scheme and designs generally invited before the final decision is come to. We can hardly imagine to ourselves a competitor so utterly crazy as to object. If there should be such a person among the fifty-three, let public notice be given, and let him remove his drawings before the public scrutiny is to be begun. It would then be an interesting problem for the members of the school committee to determine why they were ever sent in. The exhibition should be made for its own sake, apart from the question of the decision. There must be many useful ideas, which, as the authors are willing to put them before the world, would be appreciated by the special public which is to take care of the middle-class education of the future.

Macclesfield School of Art.—The Macclesfield new School of Art and Science has been opened by the senior member for the borough, Mr. W. C. Brocklehurst. The building has cost 5,500*l.*, and is erected on a plot of land given by the corporation. It has yet to be furnished, and this will entail an extra cost of 1,500*l.*

NEW WESLEYAN COLLEGE, BIRMINGHAM, COMPETITION.

FORTY-TWO sets of designs were received, and Mr. Alfred Waterhouse has recommended the following for the premiums in this competition, viz.:—1st, "Ut Migraturus Habita"; 2nd, "Wesleyan"; 3rd, "Speramus." Mr. Waterhouse adds:—

"In making these awards I have compared and weighed the forty-two designs—

1. By the scales of the conditions, ascertaining their general adherence to these conditions, and especially to that of cost.

2. As to their general excellence, fitness for the special objects of the College, and for the site, with its peculiarities of contour and aspect.

3. By the evidence evinced by the drawings of their authors being skilful constructors and artists, and of their ability to carry out the work in a satisfactory way if confided to their care.

I am well aware that it is rare indeed to find any one design pre-eminent in all these respects, and I do not pretend to have done so in the present instance. There is not a design in the room probably that you would wish to see carried out without some modification. I must, however, compliment many of the competitors on the excellence of their work, which seems to me far above the average."

The successful competitors are:—1. Messrs. Ball & Goddard, Birmingham (who are appointed architects); 2. Mr. C. O. Ellison, Liverpool; and 3. Messrs. F. & A. Wheeldon, Birmingham, and H. Beck, London.

THE NEW CHURCH OF ALL HALLOWS SOUTHWARK.

LAYING THE MEMORIAL STONE.

A BENEVOLENT old lady, Mrs. Hunt, having left the sum of 10,000*l.* towards the building and endowment of the permanent church of All Hallows, Southwark, the structure has for some months past been in course of erection, from the designs of Mr. George Gilbert Scott, and is now considerably above the ground level. Last week the ceremony of laying the memorial stone took place in the presence of a large body of the clergy and other friends of the undertaking, the ceremony being performed by Earl Beauchamp, Lord Steward of Her Majesty's Household.

The site of the church, which cost upwards of 4,000*l.*, is in Pepper-street, off Union-street, in the immediate vicinity of Gravel-lane, which is, as we well know, one of the most poverty-stricken, woe-begotten, and heathenish spots in Southwark. The style of architecture is the Middle-Pointed Gothic, and the edifice will be one of the largest churches in the metropolis, having seating accommodation for 1,200 persons. The nave and aisles will be 90 ft. in length, and the chancel and sanctuary 60 ft. long, making the entire length of the interior 150 ft., whilst the width of the nave will be 32 ft., and the aisles 17 ft. The nave will be divided from the aisles by arcades of four bays. The chancel will also consist of four bays, and will be 25 ft. in width. A special feature in the church is that the clergy and choir vestries are to be in the basement of the building under the sanctuary, the chancel being approached from thence by a flight of steps on the north and south sides. The chancel aisles will form side chapels, and over one of them will be the organ-chamber.

The contractors for the building are Messrs. Higgs & Hill, of the Lambeth Works.

GATESHEAD INDUSTRIAL SCHOOL.

IT has been found in Gateshead, as in other towns, that there is a class of children which cannot be gathered into the ordinary Board Schools, and the Board, therefore, have availed themselves of powers conferred by the last Education Act to commence the erection of day industrial schools,—a class of school different from the ordinary schools of the Board, and different also from the penal industrial schools. The foundation-stone of this school was laid on the 5th inst., on a site at the Windmill Hills. In these schools children will be taught some industrial pursuit as well as the ordinary elements which form the usual education of day-schools; and, in addition to this, they will be fed and, as it were, live at the schools during the day. The proposed building is intended to accommodate 200 children, comprising an equal number of either sex. The structure will be two stories in height. The arrangements on the ground-floor will comprise the dining-hall, centrally situated, with entrance at either end; boys' lavatories, superintendent's office, workrooms, bathroom, stone staircase to second story, covered playground, and offices on the boys' side; kitchens, scullery, pantries and larders, bathroom and girls' lavatories on the girls' side. A large washhouse and laundry will be erected apart from the main building, and at the end of the female department will be situate a house of four rooms for the use of the school-keeper. The plans provide for a spacious mixed school-room, with three class-rooms upstairs, where also will be provided store-room and private rooms for masters and mistresses. The building will be built of red brick, with stone dressings and slated roofs, and the entrances, corridors, and staircase will be fireproof. Messrs. Oliver & Leeson, Newcastle, are the architects.

FRIEND LABOUR.

Now gaffer labour, drink, carouse,
Deeper and deeper! Join him, spouse!
The nation waits your orgie o'er
To settle down to work once more.
The land, the shop, the ship, the mart,
Stand ready to perform their part.
So let the foaming pot go round,
Give legs of mutton to your hound,
Give to time no thought or sorrow,—
There's always plenty in to-morrow.
Don't number sands while quarts ye drain,
To-morrow's but to-day again.
So sup, my lads, and spend the lot,
Then work for more. Stay! you must not
Gaffer it more; no, ne'er again.
Money and muscle, ye are twain;
But what power's this that looms? The brain?
As lightning makes the thunders roll
And belch and crack from pole to pole,
So doth the brain the earth embrace,
The king of kings, of time, of space.
So money, muscle, brain,—ye three,
Form one almighty trinity;
Let no arch-serpent disunite
The total of your heav'n-born might;
But kindly trample it to death,
Cleanse life of its infectious breath,
Then step together, hand in hand,
Give blessings thick as ocean's sand,
Thou Godlike puissance of our land.

CHARLES FITTER.

THE CLAIM OF AN ARCHITECT.

AT the Clerkenwell County Court, on the 13th inst., before Mr. Gordon Whitbread, the judge, Mr. Thomas Charles Sorby, of Bedford-row, architect, sued Mr. Frank C. Scargill, of Luton, Beds, for 7*l.* 18s. 10d., for attending on subpœna on two occasions of arbitration before Mr. I'Anson; with plans, drawing specifications, &c. (5*l.* 5s.); searching for original drawings relating to contract between Mr. Scargill, the defendant, and Mr. Shoppee; attending the office of solicitors relating to the same on two occasions; solicitor's charges against him, &c. Mr. Wakeling, solicitor, who appeared for the plaintiff, stated that the action was brought to recover the sum of 7*l.* 18s. 10d. for attending an arbitration as a witness, and the charges were those sanctioned by the Institute of British Architects. The plaintiff was engaged as architect in the erection of a private residence for the defendant, at a cost of 15,000*l.*, and there were some differences between them and also between the defendant and Mr. Shoppee, the quantity surveyor, against whom defendant commenced an action, which was referred to arbitration, and on the hearing of which the plaintiff was subpœnaed to attend, for which he now claimed his expenses. His honour remarked that Mr. Wakeling had shown no authority for the claim. Mr. Wakeling said it was well known to be the general practice for a witness attending on his subpœna to be paid. The judge: You must show it to be the general practice. Mr. H. Browne, barrister, for the defendant, said if a witness was served with a subpœna, he was entitled to be paid his expenses before attending to give evidence, and if he was not supplied with such expenses he need not come, but if he did come he must claim his expenses before giving his evidence, for he could not do it after. Mr. Wakeling thought plaintiff was enabled to bring his action on his subpœna. His honour thought not. Mr. Browne cited the case of Collins *v.* Godefry, 1 D. P. C., 326, and 1 B. & A., 750, where it is laid down that a witness attending at the trial of a cause on subpœna cannot recover the expenses for compensation for his loss of time in attending, even though he is an attorney, so that a witness cannot bring his action, but in this case the witness would be paid his expenses in due course. The case was then withdrawn.

CAUTION TO SURVEYORS AND VALUERS.

TUDOR AND ANOTHER *v.* DURRANT.

THIS was an action, in the Exchequer Division, of considerable interest to surveyors and valuers, and was brought against the defendant for negligence in valuing property on which the plaintiffs advanced money.

It appeared that in 1877 the plaintiffs, Mr. F. Tudor, now a solicitor, and his uncle, a clergyman, had some trust-money in hand which they wished to invest. In August of that year Mr. Durrant, the defendant, a valuer, introduced a Mr. Ingledew to Mr. F. Tudor (who, it would seem, acted alone in the investment) as a gentleman who was desirous of raising a loan for the Anglo Transferred Fur Company, when Mr. Tudor consented, on certain conditions, to make an advance. The business of the company, which was managed by three partners, consisted in the manufacture of fur by removing the hair from skins and sticking it upon canvas, and it was carried on in England by one of the partners, Mr. Max Hirsch, at premises in Russell-street, Bermondsey. On the 1st of September an agreement was drawn up, by which the plaintiffs consented to advance 500*l.* at 6 per cent. per annum on the mortgage of these premises, which consisted of two leasehold houses, and the plant, machinery, and fixtures upon the premises; but the advance was to be conditional upon a valuer, appointed by the plaintiffs, reporting, after a survey of the property, that it was worth "at least 800*l.* as a mortgageable property," and that the title should be properly deduced. Tudor instructed the defendant to make a valuation of the property, which the latter accordingly did on the afternoon of the same day, and sent his report, together with a bill, to Mr. Tudor on September 6. In his report the defendant described the property, and annexed to the report a schedule of the plant and machinery, "from which," he wrote, "you will observe the premises are appropriately fitted, and offer every accommodation for the present business, as also that of a tanner, the rental value as they now stand being in my opinion 170*l.* per annum. The present staff comprises from eighteen to twenty hands, five being skilled operatives. I am informed the property is held on lease for a term of twenty-one years, from December, 1875, at a rental of 65*l.* per annum, and I am of opinion the present value, together with the plant and machinery, is 790*l.*" On this report the plaintiffs advanced the money, 550*l.* in all, to the Company, and Mr. Durrant was paid 8 guineas, the amount of his bill. Before long Mr. Tudor became uneasy about the value of the security, and took steps to call in the money he had advanced. Max Hirsch left the country in January, 1878, and in March the plaintiffs took proceedings against the Company, and, no defence being raised, signed judgment against them, but were no better off by so doing. The plaintiffs then applied to the defendant to sell the property, and, on his failing to do so, put it into the hands of Mr. Billingay, to sell by auction. This was accordingly done, when the total amount realised by the sale was under 100*l.*, and the gross amount received by the plaintiffs, after all deductions, some 24*l.* The present action was then brought against the defendant, on whose behalf it was contended that the investment was merely a speculative one on the part of Mr. Tudor, who had been persuaded by Max Hirsch, and believed that the company was doing a flourishing business, and that the high rate of interest,—6 per cent.,—showed that the investment was of this nature. The small price realised at the sale was attributed to the fact that business had become of late very depressed, and that the property had not been judiciously disposed of, and several professional gentlemen who were called on behalf of Durrant expressed themselves of this opinion, and thought that Durrant had exercised proper skill in making his report. One of them, Mr. Notley, of Cornhill, who stated that he had had great experience in such matters, considered that Durrant had even under-estimated the value of the lease.

The Judge, having summed up the case, left it to the jury to say whether the defendant had been guilty of a breach of duty in making his valuation, and if so, what amount of loss the plaintiffs had thereby sustained.

The jury returned a verdict for the plaintiffs, damages 527*l.*

LIGHT AND AIR CASE.

RICHARDS *v.* SANDON.

THIS was a motion in the Chancery Division, before the Master of the Rolls, to restrain the defendant from building so as to obstruct the access of light to the plaintiff's hotel, in Bury-street, St. James's. The defendant's buildings were intended to be let out as chambers.

Mr. Davey, Q.C., and Mr. Eyre appeared for the plaintiff, and produced a model showing the position of both premises, an inspection of which, they submitted, would show that the plaintiff was entitled to an injunction against the defendant.

His lordship observed parenthetically that the height to which modern buildings were carried afforded anything but a happy prospect to dwellers in narrow streets. He spoke looking at the height of the buildings shown on the model, standing in a street only 34 ft. wide.

Mr. Davey said the hotel would simply be ruined unless the Court interfered.

Mr. Chitty, Q.C. (with whom was Mr. Rodwell), for the defendant, said the plaintiff had seen the plans, and had personally seen the defendant before the buildings were erected.

Mr. Davey said that some kind of verbal arrangement made in the course of conversation was set up by the defendant, and denied by the plaintiff.

Mr. Chitty averred that the plaintiff had, at all events, acquiesced in what had been done, and in fact he had tried to catch the defendant in a trap. The building would improve the street and the business of the hotel with it. At all events, the occupants of the chambers would probably dine there.

His lordship, examining the model, said it certainly appeared to show a *primâ facie* case for the plaintiff, and after further conversation the matter stood over, on the defendant's undertaking not to proceed with his building where it faced the hotel beyond a line agreed upon.

LIABILITY OF LANDLORD TO RECOUP TENANT FOR WORKS UNDER THE PUBLIC HEALTH ACT.

CASTLEBERG *v.* KENYON.

THIS case was heard, on appeal from the decision of the judge of the Wandsworth County Court, in the Queen's Bench Division of the High Court of Justice, on Saturday last, before the Lord Chief Justice and Mr. Justice Lush.

The plaintiff, as stated in our previous report of the case (see p. 354, *ante*), sued his landlord to recover money he had been forced to pay under the Public Health Acts in the removal of a nuisance caused by defective drainage, &c. The case raised an important question as to the liability of landlords and tenants under such circumstances. By the Act of 1855, 18 & 19 Vict., cap. 121, the owner is to make good and proper drainage, and if it appears that the drainage is bad there may be notice to the "owner or occupier" to do it, and if it is not done then the occupier is liable to a penalty, and the Board may do it and charge the owner. In the present case, the notice being given, the occupier, to avoid the penalty, did the work, and then sought to recover the amount from the landlord, who refused to repay him or allow it out of the rent. The County Court judge disallowed the claim, and the tenant thereupon appealed.

The contention for the defendant, the landlord, was that the Board were to do the work if the owner did not do it, and that the tenant had no business to do it himself; but

The Lord Chief Justice said this was not an honest defence. The owner was ultimately liable, and the occupier was liable to a penalty meanwhile if the work was not done, and, in order to avoid the penalty, as the owner would not do it, he did it himself. It was dishonest to seek to take advantage of such an objection in answer to such a claim,—a claim to be reimbursed by the landlord for the expense of work done under legal compulsion for the necessary improvement of his own property.

Mr. Justice Lush said the effect of the enactment was, that the landlord was ultimately liable for the work, but that the tenant was compellable by penalty to do it in case of default of the landlord.

It was urged that, under the Nuisances Removal Act 1855, 18 & 19 Vict., cap. 121, there was an order necessary, and this order had not been obtained.

The Lord Chief Justice, however, said that the ultimate liability was on the owner, and the tenant was practically compellable to do the work if the landlord would not do it; so that on the whole case the judgment of the Court was for the plaintiff, the tenant, that he was entitled to recover from the landlord the amount he had paid. The effect of the legislation on the subject, they said, was to throw the ultimate liability on the owner, though the tenant might be called upon in the first instance to do the work.

Judgment was, therefore, given for the plaintiff.

THE PATENT THERMOGRAPH.

WE owe this useful and ingenious invention to Mr. Bowkett, of the Leeds Fever Hospital. It is constructed, as its name implies, for the purpose of obtaining continuous records of the varying temperatures to which it is subjected.

The thermal portion, or that part of the instrument which is directly influenced by the variation of temperature, consists simply of a hollow spring or tube similar to that in use in the Bourdon pressure gauge. This is bent into a semicircle, and completely filled with a suitable fluid and hermetically sealed.

The pressure obtained from a fluid expanding under the influence of varying temperatures is applied for the purpose of registering those temperatures, on the principle that any given fluid in expanding will exert a pressure at all times proportionate to its expansion or hindered expansion.

The metallic tube thus filled is found perfectly sensitive for the purpose; this is fixed at one end to a suitable case, the other or free end is connected with an arm to which a lead pencil is fitted. This arm is carried across the face of a travelling dial. The dial carries a paper disc which is divided by radii into hours and their divisions, and further by a number of concentric circles.

The centre of the disc is the zero of the thermograph, the circumference corresponds to the maximum range. The concentric circles mark the intermediate degrees. The arm, as the temperature varies, approaches the centre or circumference, the lead attached to it marking a legible line, the disc travelling meanwhile like the hour-hand of a clock, making one revolution in twelve hours; thus a line is drawn on the disc or dial, the position of which, in reference to the concentric circles, marks the temperatures, and, in reference to the radii, marks the times of those temperatures.

This instrument is portable, not liable to get out of order, is uninfluenced by position, and admits of an infinite variety of designs. The one before us is for hot-house purposes, and is contained in a flat perforated metallic case of about 8 *in.* in diameter, and has a range of 70 degrees.

The inventor informs us that one which he has had in action in his sitting-room chronicles, by the record of temperature, the lighting of the fire and gas, and the opening of the doors and windows, much to the horror and amazement of the domestic in attendance, who, on being directed to open the windows on rising in the morning, is thus confronted with a witness who is ready to convict her of any laxity in the punctual performance of her duties.

Messrs. John Davis & Son, of All Saints Works, Derby, have the working of the patent.

ELTHAM.

THE wooden spire adjacent to the recently rebuilt parish church is now to be removed, and a new stone tower and spire substituted adjoining to and of the same character as the church. The church was rebuilt in 1874-5 by Mr. J. G. Naylar, of Rochester, from the designs of Mr. A. W. Blomfield, at a cost of upwards of 6,000*l.* The plans for the tower and spire are from the pen of the same architect, and Mr. Naylar's tender of 2,677*l.* being the lowest, he is now engaged in removing the old spire preparatory to commencing building the new one. Owing to want of funds, the committee have decided to enter into a contract for the erection of the lower part only at present, at a cost of 1,500*l.*, but they hope, before this portion is finished, that funds will flow in sufficient to enable them to complete it. Mr. Naylar has built several other churches in the vicinity within the last few years.

THE ORIGIN OF GAS.

SIR,—In the interesting article on "The Night Lights of Old London" in the *Builder* of April 5, it is stated that the earliest account of the discovery of gas is to be found in the "Philosophical Transactions" for the year 1667. On referring to the volume for that year, I find the paper of Thomas Shirley, describing the discovery, appeared in No. 26, for June 3, 1667, "Printed by T. R., for John Martyn, Printer to the Royal Society, and are to be sold at the Bell, a little without Temple Bar, 1667."

(While I am writing this, the last stones of the old gateway of Wren's work,—Temple Bar,—are being removed, and these last stones belong to the southern abutment, adjoining the old bank of Child & Co., also now pulled down.)

Having occasion to refer to a copy of a very rare little book which I possess, written by Dr. Robert Wittie, entitled "Scarbrough Spaw, or a Description of the Nature and Vertues of the Spaw at Scarbrough, Yorkshire," being the second edition (of which the first appeared in 1660), and a book that caused some amount of criticism at the date of its publication, I was very much interested to find a notice of "a mine of cannel coal (as they call it) which is underneath; and was first discovered by a boy, who in the mine below did let a candle fall into water, where the like bubbling was that took fire."

Thinking this extract a very interesting fact, and worthy of being more widely known, I presume to trouble your readers with its perusal.

T. C. NOBLE.

PAYMENT OF ARCHITECTS.

SIR,—May I be allowed the favour of asking, through the medium of your journal, a question which often troubles me [as well as others of my profession, viz.,—supposing plans, &c., complete, have been prepared for a certain work or works, and after the contract for such works has been duly signed, and the building commenced, that the employer wishes deviations and alterations, and additions from the original plans, &c., which incur new plans of these altered parts, with specifications, &c., is the usual five per cent. upon these extra works to be considered as remunerative to the architect for the plans, &c., for these extra works, which involve the additional trouble in showing and specifying the deviations and omissions, as well as the actual extra work, as the labour in these cases is very considerable? I am making these inquiries with a view to ascertain the fair and honourable way to deal with my employers, while I wish to act in a way not ungenerously to myself.

X. Y. Z.

ARTISANS' DWELLINGS.

SIR,—It appears that additional dwelling-houses are about to be built on the site of the new Bunhill-fields Burial-grounds. It is a monstrous thing that model dwellings for those classes who are compelled by necessity to occupy every available place of abode in this great city, irrespective of its suitability for human habitation, can be built over the crowded graves of past generations, while, at the same time, in every district of the metropolis houses have been pulled down and land cleared for the purpose of building such dwellings.

The speculating builder is allowed to make money at the expense of the public health, and the ingenious contrivances by means of which the largest city in the world is deprived of self-government not only permit of this being done, but absolutely encourage it, by placing such high prices on the land that has been cleared as practically to make it commercially impossible for artisans' dwellings to be built on it. If these dwellings could command the same rent as offices would, there would have been no need for the intervention of Parliament.

If some public pressure is not brought to bear upon the authorities entrusted with the carrying out of the Artisans' Dwellings Act, this unsatisfactory state of things will continue. An effectual way to prevent the recurrence of such mischievous administration would be the establishment of a real system of local government in London.

More than forty years ago, by authority of the Clerkenwell Improvement Act, land was cleared in what is still one of the most crowded parts of the City, and this land is even now lying waste. As Sir Sidney Waterlow pointed out, in appealing to the Court of Common Council, to do something with these waste spaces, this land, if let at a low rental, or sold at a low price for building purposes, would, before this, have given a return in ground-rent and local assessment far in excess of the highest price that could be expected to be obtained for the land to-day.

The whole question calls for investigation, as it is one of vital importance to the whole of the community.

MARK H. JUDGE.

A PRACTICAL PROPOSAL.

HAVING in view the domestic dangers to health arising from imperfect workmanship by plumbers, and the use of improperly so-called "sanitary appliances," the Council of the National Health Society have taken into consideration the most practical means of striking at the root of these serious evils. The conviction that a want of knowledge by working men of the elementary laws and applications of the laws of sanitary science is a chief cause of those defects, has led the committee to the conclusion that great good to the community would ensue from the practical teaching of elementary sanitary science to workmen actually engaged in building our houses. The society proposes to organise a series of lectures and demonstrations to working plumbers. At the close of each series of lectures handsome money prizes would be awarded to those who gave the best evidence of having profited by the teaching. The National Health Society have reason to believe that not only would the lectures be very numerously attended, but that the matter will become one of general discussion in the workshops. Such a movement can hardly fail to be of great public benefit; the committee, therefore, venture to hope that you will kindly lend your powerful aid in making their proposal widely known, with a view to raising at once the requisite funds.

ERNEST HART, Chairman of Council.
F. LANKESTER, Secretary.

44, Berners-street.

Technical Education for Plumbers.—The Court of the Plumbers' Company recently appointed a committee, consisting of Mr. George Shaw, the Master, Mr. Digby Seymour, Q.C., and Mr. P. Wilkinson, to consider and report as to the best practical means of extending the utility of the company and elevating the character and educational standard of the workmen engaged in the trade of plumbing. The committee, after inquiry, have recommended that any workman belonging to the trade who produces evidence of having been for fifteen years in good and approved employment as a plumber, and of having done his work to the satisfaction of his master, and who furnishes vouchers of good personal character, should be eligible for admission, free of expense, to the freedom of the company; with its privileges and benefits; and, next, that any workman belonging to the trade, who should produce a certificate of having worked for at least ten years as a plumber under one approved employer, by whom he should be recommended for his skill, proficiency, and good character, should, on passing an examination by the Court as to his knowledge of the principles and practice of the art of plumbing, be entitled to a diploma under the company's seal, testifying, in the language of their ancient charter, dated in 1365, that "he knows how well and lawfully to work and to do his work."

Thetford.—The works for the erection of a new school, in connexion with the Roman Catholic Chapel at Thetford, have been commenced. Mr. B. Pearce is the architect, and Mr. William Hubbard the contractor.

QUANTITIES AND CONTRACTS.

SIR,—I am pleased to see in your issue of the 7th inst. that some notice has been taken by our Scotch brethren of that part of Mr. Honeyman's paper read at the Institute of Architects, relative to the employment of measurers and their *locus standi*.

It may or may not be true that the "average surveyor," in the author's experience of him, could not be expected to command the necessary sum to pay the cost of his errors of measurement, if any; but it is certainly true that it has been more than once within the experience of our English brethren, and I would include our Scotch brethren too, that after the quantities for a building have been prepared with the consent of the client at a rate per cent. previously agreed upon, the proposed building has been abandoned, or has been so modified as to necessitate new plans or an entirely new set of quantities. The "average surveyor," upon the representation of the architect or the client, as it may happen that under the circumstances the charge for the preparation of the quantities should be reduced, has been magnanimous enough to consent to accept considerably less than the sum he would have been legally entitled to receive in payment for his well-earned services had he stood strictly upon the original agreement.

The writer has read Mr. Honeyman's remarks with much interest and benefit, and thinks that good will come of it; he has also seen something of the Glasgow and Edinburgh systems of measurement on the spot, and has compared their merits according to his own lights and for his own instruction. They, like our English system, are not perfect, and future discussion by the Institute will help much to bring out the good and useful parts of either system, so that each may be better understood and appreciated.

N.

Books.

The Highway Acts, 1862-1878, *the Locomotive Acts*, 1861-1878, *with Introduction, Notes, &c.* By ALEXANDER GLEN, M.A. With a Paper on the Construction and Repair of Roads by W. NETHERSOLE, M.I.C.E. London: Knight & Co. 1879.

WHEN a book has reached a fifth edition, criticism is powerless for good or ill, for it has clearly satisfied the public wants, and, bad or good, it has answered the purpose for which it was written. But we may fairly say that this book is a most useful compendium of the matters which it treats. After the legislation of last session, it was necessary to issue another edition, because the passing of the Highways and Locomotives Act, 1878, 41 & 42 Vict., c. 77, has made several important changes in the law. We have no intention here of discussing the policy of the most recent highway legislation; but one thing is very obvious, that steam locomotives on highways are expected to increase. And further, we confess that it seems to us time that these Highway Acts, extending over a period of nearly twenty years, should be consolidated into a single Act. Until that is done, no one in any way concerned with highways can very well dispense with Mr. Glen's most portable volume. But the mere fact that an industrious lawyer can, in seventy-seven pages, give a general introductory outline of the legislation in relation to highways, and in another two hundred pages give the text of the law, shows that such a consolidation is by no means a task of great difficulty, and would be an immense public convenience.

Ten Lectures on Art. By EDWARD J. POYNTER, R.A. London: Chapman & Hall, 1879.

MR. POYNTER has brought into a volume a number of lectures written and delivered by him, mostly when he held the Slade Professorship at University College, headed respectively:—1. Decorative Art; 2. Old and New Art; 3. Systems of Art Education; 4. Hints on the Formation of a Style; 5. The Training of Art Students; 6. On the Study of Nature; 7. Value of Prizes; 8. Objects of Study; 9. Professor Ruskin on Michelangelo; and 10. The Influence of Art on Social Life. It will not be expected that we can agree with Mr. Poynter in all his teaching, and we may hereafter examine at length some of his opinions; but we can nevertheless warmly recommend the book as an interesting and valuable contribution to art literature. Mr. Poynter often writes dogmatically enough, but he protests against it in others. He breaks a lance with Mr. Ruskin on the merits of Michelangelo; in fact, he would run him through with it if he could; and he uses such terms concerning the latter-day doings of Mr. Ruskin as will gladden the hearts of that gentleman's enemies. Milder-mannered men will, perhaps, regret that one Slade Professor finds it necessary to speak so of another Slade Professor, and lament the fallibility of human judgment. It will vex others, too, to hear that our only hope of getting fine workmanship lies in obtaining aid from abroad. "In all matters connected with modelling and metal work," says Mr. Poynter, "the French and other nations excel us on every point; it is well known, indeed, that our most eminent pottery firms and silversmiths employ French workmen. Our plan, therefore, is to establish technical schools under the best foreign teachers that are to be found; and if our manufacturers are not too much under the influence of trade jealousies to allow it, and our mechanics not too conceited to learn, some good may be done." This is a sad admission from the Director for Art in the Government Science and Art Department.

Miscellanea.

Electric Light.—The report of the select committee appointed by the House of Commons to consider the question of lighting by electricity, it is understood, is to the following effect:—That sufficient progress has been made with electricity as a means of lighting to encourage the belief that it has an important future before it, and not only for illuminating purposes, but as a source of power which may be wisely distributed and applied to mechanical purposes. The committee are of opinion that the electric light, even in its present state of development, can be advantageously used in large areas, open or enclosed, such as large halls, squares, or railway stations; but they do not think it has been so far matured as to be able to compete with gas for domestic purposes. They therefore do not recommend any legislation for applying the light to private purposes on the strength of its being practicable for large spaces and buildings, but they do recommend that no legislative restrictions shall be allowed to impede its further development. As to granting authority for adopting the electric light, the committee think there is already in existence sufficient power for applying it to open spaces and large centres; and, mentioning the diversity of views among the witnesses as to whether or not municipal bodies have power under existing statutes to break up streets for the purpose of laying electric light wires, they say that if such power does not exist it should be granted under proper regulations. They consider, however, that the time is not yet ripe for allowing private companies to break up streets in order to supply the electric light, but they advise that municipal authorities should receive all possible help for public lighting by electricity, and that the legislature should be willing to give all reasonable facilities for extending the use of the electric light where proper demand for it arises. They consider further that for lighthouse purposes the electric light has established itself, but they have not been able to satisfy themselves from the evidence that electric lighting is economical as compared with gas.

An Archdeacon on Church Restoration.—The Ven. Archdeacon Hannah, vicar of Brighton, in the course of a "charge" delivered by him at Hastings the other day, said, with reference to the restoration of churches:—

"It is of little use to suggest definite rules on the subject when what we want is not a set of hard rules, but the personal responsibility of practical knowledge, reverence, and care. Perhaps, however, we might lay it down with safety that a careful restoration should aim at reinstating the main features of the church to the latest date of what can be acknowledged as a true and genuine building, sweeping away what is obviously mean and worthless, unworthy concessions to unseemly selfishness and comfort, or the poor expedients of a niggardly repair. We really cannot admit the claim to reverence of unseemly galleries and high-backed square pews. A great square pew is an aggression on the rights of others, which we ought not to maintain merely because it may have suited the habits of our grandfathers, though it has sometimes left a sad legacy in the alienation of the poor. We cannot retain the original pavement if it has been shattered till it has become altogether uneven, damp, and unwholesome. We cannot leave the chancel any longer to the owls and bats, because it may have been, till lately, the indolent custom to conduct the old service in the nave. We cannot rest satisfied with obvious barbarisms such as square-headed wooden frames in Gothic windows, or wooden bars, which have been substituted for ancient stone mullions. We certainly ought not to interfere with a genuine Perpendicular window in an older church, because, whether we admire it or not, it was an honest piece of architectural workmanship, which cannot be said of a wooden sash-window."

Another Theatre.—We understand a plot of land in Northumberland-avenue, adjoining the Grand Hotel, has been let, on which a theatre for Mr. Toole is to be erected. The ground-rent is 5,000*l.* per annum, but the land affords space for shops and other buildings besides the theatre.

A Wages Dispute.—James Moore Lucas, Rose Cottage, Kew-road, was summoned by James Booker and Robert Standen, at the Richmond Petty Sessions, for the non-payment of 1*l.* 15*s.* 6*d.*, arrears of wages for work done. The complainant Lucas stated that he lived at 1, Orchard-cottages, Mortlake-road, and was an excavator. The work done was digging out foundations in Sandy-lane, which had been carried out by him and another man. Defendant said he should object to the summons being taken out in both names, as he had engaged the complainant only, and knew nothing of the man Standen at all. He wished the case to be heard, but he certainly objected to the claim being made in the joint names. Complainant said he and Standen excavated 33½ yards, for which they presented a bill for the amount claimed, but the defendant refused to take the bill, and ordered them off the premises. They had excavated 28 yards, and would have finished the work if the defendant had allowed them. Robert Standen stated that he had been working with Booker. He claimed half the money. Defendant denied that the work stated had been completed, and called James Morgan, who was foreman of the labourers. He was certain there were not 28 yards excavated. The Bench made an order for the payment of 28*s.*,—28 yards at 1*s.* per yard. The defendant, in applying for a summons against the men for leaving their work, said they had excavated the easiest portion of it and had left him to get the remainder done as best he could. Defendant is the manager of extensive building operations at Richmond on the Selwyn Estate, and disputed the claim on principle.—*Mid-Surrey Times.*

Mr. H. Noel Humphreys.—The *Times* records the decease of Mr. Henry Noel Humphreys, which occurred at the close of last week at his residence in Westbourne-square, Hyde Park. A son of the late Mr. James Humphreys, of Birmingham, he was born in the Midland metropolis in 1809 or the following year, and received his early education at King Edward's School, Birmingham. Having spent some time in artistic studies in Italy, he published his first work, consisting of illustrations of Mr. W. B. Cooke's scenery of Rome and its neighbourhood. His next work, which bears date 1840, entitled "British Butterflies and their Transformations," he published in partnership with Mr. J. O. Westwood. This was followed by works of an archæological character,—"Illustrations of Froissart's Chronicles," "The Parables of Our Lord Illustrated," "The Coins of England," "Ancient Coins and Medals," "The Illuminated Books of the Mediæval Period," the "Coin Collector's Manual," the "Coinage of the British Empire," "Stories by an Archæologist," and especially "The Art of Illumination," and "The History of the Art of Writing from the Hieroglyphic Period down to the Introduction of Alphabets." Mr. Humphreys contributed several papers to our own columns some years ago.

Truro Cathedral.—At a recent meeting of the executive committee of the Truro Cathedral Fund, Mr. Pearson submitted his plans for the new cathedral, and it was agreed to recommend them to the General Diocesan Committee, with a suggestion that the first part, consisting of the nave and transepts, should be commenced immediately, at a cost not exceeding 30,000*l.* The plans display the chief points of a structure in the thirteenth century style of architecture, and include a central and two western towers. The ground-plan shows the proposed ultimate erection of a cathedral proper, with nave, aisles, transepts, and choir, together with cloisters and cloister court. The space under the choir will be used for vestries, temporary chapter-room, &c. It is proposed that the aisle of the present church should be worked into the building, and the south porch of the transept is made perceptibly richer, in order to blend with the more profuse ornamentation of the south aisle wall.

Masonic Female Orphan School, Carlow. It has been resolved to build a more commodious school than that in the Burlington-road, for orphan girls. A site has been obtained comprising nine acres, at Donnybrook, from the Earl of Pembroke, on a lease for 200 years. Messrs. M'Curdy & Mitchell, architects, have prepared the plans, and the estimated cost is between 9,000*l.* and 10,000*l.* The building will be constructed to accommodate from seventy to 100 children.

White Brick Manufacture.—A process has been patented, and is now being carried out, by Mr. Robert Pickwell (of Clarke & Pickwell), civil engineers, Lowgate, Hull, for the manufacture of white-pressed bricks from common red clays. Red clays abound in and around Hull, but the white clay which yields the white brick is scarce, and situated at considerable distances from the town. This process consists in mixing or grinding into the common clay a cheap material,—chiefly magnesian limestone,—which has been reduced to an impalpable and harmless powder by being burned and slacked. This mixture is passed through a series of mixing and grinding mills, and so completely ground that each particle of each ingredient is brought into close contact with each other. This mixture is then acted upon as it leaves the last mill by an apparatus which reduces it to a fine grain almost like running soil, in which state it falls through the feeder into the moulds of a powerful steam-pressing machine, is subjected to a heavy pressure, and is delivered at the delivery-table a complete and almost dry-pressed brick, which, when burnt in the kiln, produces a white brick of good quality. The ingredients added to the clay at once absorb about 40 per cent. of the moisture found in the natural clay, and the grinding is so close and complete that the mixture is thoroughly and evenly amalgamated. The change effected in the colour of the red clay on being burnt is due to the presence of the mixture. We understand the bricks can be made at a cost of 20s. to 22s. per 1,000, the sale price of similar bricks being at the present time 50s. to 52s. 6d. per 1,000 in Hull, and in London 75s. per 1,000. The process is said to be applicable to common red clays in any part of the country.

Social Science Congress.—The following are the Special Questions as agreed to by the committees of three of the departments for discussion at the Manchester Congress:—*Health Department.*—1. What are the evils resulting to health from the growth, outside the boundaries of municipalities, of suburban districts, without due regulation and control? 2. What are the best means of improving the sanitary condition of existing houses of the middle classes, and the best mode of building so as to combine sanitary and commercial value? 3. The National Water Supply. *Department of Economy and Trade.*—1. What steps should be taken to protect shareholders and the public from mismanagement in joint-stock enterprises? 2. What alterations in the land laws will be to the economic advantage of the country? 3. The renewal and extension of our commercial treaties, and what are the chief obstacles to the general adoption of free trade? *Art Department.*—1. What subjects are most suitable for the pictorial decoration of public buildings in this country, and with whom should the selection rest? 2. Is it possible or desirable to establish regulations for the improvement of street architecture, and for the prevention of the disfigurement of towns and cities? 3. Is State aid beneficial to art?

The "Empress" Ventilator.—This ventilator combines two important principles. It produces a strong up-current by the revolution of the archimedean screw, and an up-current is also produced by the introduction of a cone inside the wind-fans; so that should the ventilator at any time become fixed from any cause, it will act as effectually as any ordinary stationary ventilator in producing an up-current. The cone acts also in preventing down-blow. The top part being a fixture, and the lower part only revolving, the latter can be made very much lighter than in the old archimedean ventilator, so that it does not require so much wind to start and keep it in rapid motion. Messrs. Ewart & Son, of the Euston-road, are the patentees.

The Foundation Stone of the New Eddystone Lighthouse will be laid by the Duke of Edinburgh, as Elder Brother of the Corporation of the Trinity House, this Saturday, the 21st. The Prince of Wales and the two young Princes, now cadets at Dartmouth, will accompany him at the ceremony. The estimated cost of the new lighthouse is 70,000*l.*, and it is proposed to light it by electricity. This beacon stands upon some low rocks twelve miles from land. It is 120 years since the present lighthouse, built by Smeaton, was erected.

Royal Academy.—Cards have been sent out by the President and Council for a *Conversazione* on Wednesday, July 2nd.

The Strike in the Bristol Building Trade.—This strike, so far as the painters were concerned, virtually terminated on Saturday, owing to the decision given by Mr. R. A. Fisher, judge of the County Court, who had been appointed arbitrator between the master builders and the painters. The representatives of both sides having agreed to abide by his arbitration in the dispute as to whether the men should submit to ½d. per hour reduction, their representatives fully set forth their views to Mr. Fisher on Wednesday, and on Saturday last he sent in his award. It was to the effect that, having heard their respective statements, he had determined that the reduction of wages proposed by the masters by reason of the depressed state of trade and the downward tendency of wages or otherwise, should not be made with respect to the operative painters and their particular industry.——Contrary to expectation, the masons and carpenters, instead of accepting the arbitration offered them by the Bristol Master Builders' Association, after that body had had the decision of the arbitration given against them in their dispute with the painters, have resolved to accept no settlement by arbitration. Both branches have held meetings, at which their representatives unanimously decided to refuse the employers' offer.

The Metropolitan Board and its Water Bills.—It is proposed to settle by legislation the doubts that have arisen as to the power of the Metropolitan Board of Works to pay the expenses which they incurred in promoting the two Bills last year relative to the purchase of the London water companies and the supply of water to the metropolis. Sir James M'Garel-Hogg has introduced a Bill authorising the Board to defray "the expenses incurred by their order in the preparation and promotion of these Bills and preliminary and incidental thereto."

Gilding on Steel.—An old process,—which, however, is by no means universally known,—is as follows:—By shaking a solution of gold leaf in aqua regia with ether, or naphtha, the gold will leave the acids to combine with the other liquid. Polished steel surfaces, such as knives, scissors, &c., on being plunged in this solution, when dry become covered with a coat of gold, which is an excellent preservative from rust. Letters, designs, &c., may be traced by means of a pen, pointed stick, or brush, and as the ether evaporates, the gold will remain fixed.—*The Electrician.*

The Parkes Museum of Hygiene.—The Home Secretary will be influentially supported on June 28th, when opening the Parkes Museum. Among others who will be present we may mention Earl Fortescue, Viscount Cranbrooke, Sir Thomas Watson, Professor Huxley, and the Mayors of Cambridge, Southampton, Salford, and Welshpool. The Museum comprises an area of 3,500 square feet, independent of the library. This space will be quite filled by the day of opening.

Waste Lands, Yorkshire.—Messrs. Dowsett & Woods, who have laid themselves out for the cultivation and sale of "waste lands," have sold 3,146 acres of moor land, part of the Lindholme Hall Estate, with about 40 acres of cultivated land, including parts of the bed of the old river containing warp, for 24,000*l.*

Westminster Industrial Exhibition.—The medal to be given to successful exhibitors has been very well made by Mr. John Pinches, from a design by Mr. J. P. Seddon. It is probably intentional that while the obverse is Gothic in style, the reverse is not.

The Clothworkers' Company and Lady Artists.—The Clothworkers' Company have agreed to establish an exhibition of 20*l.* per annum in connexion with the Female School of Art, Queen's-square, Bloomsbury, subject to review at the close of five years.

The Norfolk and Norwich Hospital.—On Tuesday the Prince of Wales visited Norwich, and laid the foundation-stone of the new Norfolk and Norwich Hospital. The architects, Messrs. Wyatt & Boardman, had the honour of being presented to his Royal Highness.

The Chantrey Bequest.—It is rumoured that one of the landscapes purchased by the Royal Academy, on account of the Chantrey bequest, was not executed in England, which, under the terms of the bequest, would render it ineligible for selection.

The Obelisk.—At the meeting of the Metropolitan Board of Works, on the 13th inst., a report was presented by the Works Committee on the subject of placing sphinxes on each side of the Egyptian obelisk on the Victoria Embankment, also as to proposed additions to the base of the obelisk and pedestal, in order to obviate as much as possible the present insecure appearance of the base; and recommending that a sphinx be placed on each side of the obelisk, each facing it, and that for that purpose the two granite pedestals be removed, reduced in size, and re-erected, as shown by a model submitted with the report; and that a full-sized model of one of the sphinxes and of the proposed additions be made in plaster, coloured to look like bronze, and temporarily placed in position in order that a judgment may be formed of the effect. These recommendations were agreed to.

Ely Chapel.—The ancient chapel of St. Etheldreda, once belonging to the Palace of the Bishops of Ely in Hatton-garden, was purchased by the Fathers of Charity in order that it might be restored to Roman Catholic worship. It has since been restored, and on Monday next (St. Etheldreda's Day) it will be re-dedicated and opened by Cardinal Manning. The Duke of Norfolk has filled the great east window with stained glass.

Village Home for Orphan Girls, Ilford.—On Wednesday last H.R.H. the Duchess of Teck laid the foundation-stones of two new cottages, and formally opened three others recently completed, at Dr. Barnardo's village home for orphan, neglected, and destitute girls at Barkingside, near Ilford, Essex. The Countess of Aberdeen laid the foundation-stone of another cottage.

Albert Hall.—On the 28th inst. Mr. Gye will take the whole of his company, including Madame Patti, his band, and chorus, to Albert Hall, and a great concert may be expected. This will be the first time that the *artistes* of the Royal Italian Opera House have sung as a body at the Albert Hall.

TENDERS

For children's homes, Pontypool Union. Mr. Maurice Deacon, architect. Quantities supplied:—

Jones & Co.	£5,556 0 0
Burgoyne	5,173 14 7
Lewis	5,026 15 9
Parfitt	4,659 16 1
D. J. & D. Davies	4,646 14 0
Thomas	4,451 0 0
Welsh	4,374 0 0
Chapman (accepted)	3,159 0 0

For the erection of a house at Mycenæ-road, Westcombe Park, Blackheath, for Mr. Alexander Currie. Mr. W. C. Banks, architect. Quantities not supplied:—

Staines & Sons	£1,644 0 0
Eaton	1,590 0 0
W. & F. Croaker	1,565 0 0
Sharpe & Everard	1,525 0 0

Accepted for house at Caversham, for the Rev. T. C. Page. Messrs. Cooper, Son, & Millar, architects:—

Higgs (bricklayer, slater, &c.)	£604 10 0
Warwick Bros. (carpenter, &c)	332 0 0
Moffat (plumber, painter, &c.)	115 15 0
Margrett (smith and bellhanger)	51 10 0

For house near Reading, for Mr. R. Deacon. Messrs. Cooper, Son, & Millar, architects:—

Filewood	£1,359 0 0
Wicks	1,272 0 0
Simonds	1,212 0 0
Sheppard	1,175 0 0
Dodd (accepted)	1,168 0 0
Goodall	1,066 0 0

Accepted, for brick and tile works, Calcot, near Reading. Messrs. Cooper, Son, & Millar, architects:—

Wicks (carpenter, &c.)	£412 0 0
Harris (plasterer)	122 0 0
Sumner (plumber, painter, &c.)	118 10 0
Jones (mason)	45 0 0
Pecover (founder, smith, &c.)	23 10 0

For house at Penge, for Mr. Cunningham:—

Maide & Harper	£1,475 0 0
Hockington	1,397 0 0
Smith	1,389 0 0
Somerville & Hill	1,387 0 0
Webb & Perkins	1,353 0 0
Taylor & Sons	1,230 0 0
Beale	1,218 0 0
Raymes	1,196 0 0
Jones	1,020 0 0

For the erection of warehouses on the site of Shaftesbury Hall, Aldersgate-street. Messrs. Taylor & Locke, architects. Quantities by Mr. W. Birdseye:—

Howard	£7,869 0 0
Conder	6,497 0 0
Donne	6,425 0 0
Morter	6,323 0 0
Boyce	6,270 0 0

For building school for 300 children at Cross Keys, for the Risca School Board. Messrs. Watkins & Son, architects. Quantities supplied by the architects:—

Harris	£2,025 0 0
Sage	1,925 0 0
James & Son	1,900 0 0
Prichard	1,780 0 0
Cox	1,761 0 0
Williams	1,700 0 0
Rosser	1,695 0 0
Linton	1,690 0 0
Evans	1,620 0 0
Thomas	1,543 0 0
Richards	1,527 0 0
Miles	1,515 0 0
Morgan & Son	1,470 0 0

For the erection of industrial schools at Brampton, Derbyshire, for the Guardians of the Poor of Chesterfield Union. Messrs. Rollinson & Son, architects:—

S. & W. Pattinson	£12,643 0 0
Tomlinson & Son	12,200 0 0
Wright	11,455 0 0
Cropper Bros.	11,300 0 0
Wood	11,200 0 0
Chadwick & Co.	11,000 0 0
Brailsford & Brown	10,820 0 0
Tutin (accepted)	10,667 0 0

For repairs, additions, painting, &c., at 2, Park-square, Regent's Park. Mr. R. Reid, architect:—

Clarke & Manooch	£717 0 0
Hatfield	690 0 0
McLachlan & Sons	667 0 0
Foxley	615 0 0

For additions and alterations at Buckhurst, Wokingham, Berks, for Mr. Charles J. Murdoch. Mr. Edward Power, architect:—

Toms (accepted)	£1,775 0 0

For building Primitive Methodist chapel, Binbrook, Market Rasen. Mr. J. Wright, architect:—

Kendal	£733 0 0
Wilson & Roebuck	695 0 0
Harrison	625 0 0
Sumpter & Thompson	602 0 0
Doughty	560 0 0
Topham	540 0 0
Fletcher & Brighton	528 0 0
Mackarill	525 5 5
Snowden (accepted)	520 0 0

For repairs to houses, stabling, &c., Haverstock-hill. Mr. R. W. Giblett, architect:—

Gould & Brand	£869 0 0
Steed Bros.	845 0 0
Milledge	840 0 0
White (accepted)	689 0 0
Berrill	565 0 0

For the erection of two villas at Sevenoaks Park. Mr. Edwin T. Hall, architect:—

Ennor, Julian, & Co. (accepted)	£5,070 0 0

For malting-house, Egham, Surrey, for Mr. Abraham Herbert. Mr. J. Butler, architect:—

Williams & Stabler	£1,690 0 0
Lathey, Bros.	1,559 0 0
Nye	1,483 0 0

For three houses in Wakefield-road, Page-green, South Tottenham. Mr. W. Hussey, architect:—

Bryen (accepted)	£1,330 0 0

For repairs to No. 7, North-street, Fitzroy-square. Mr. J. Shelley Birch, architect:—

Perkins	£291 0 0
Mawson & Berrecloth	283 0 0
Hindle	185 0 0

For flagging a portion of Cromwell-road, on the Freemen's Estate, Great Grimsby. Mr. J. Henry Maughan, surveyor:—

Waller	£335 0 0
Frith	330 0 0
Brown	316 5 0

For the erection of a block of offices and sale-rooms in Red Lion-court, Watling-street, City. Mr. A. Peebles, architect. Quantities supplied by Mr. W. E. Stoner:—
Morter (accepted).

For the erection of warehouse premises in Bread-street, City. Mr. Alexander Peebles, architect. Quantities by Mr. W. E. Stoner:—
Morter (accepted).

For school-buildings, Hampton-wick, for the Governors of the Hampton Grammar School. Messrs. Karslake & Mortimer, architects:—

Brass	£7,789 0 0
Pillar	7,593 0 0
Nye	7,580 0 0
Tongue	7,376 0 0
Conder	7,333 0 0
Kirk & Randall	7,221 0 0
Hook & Oldrey	7,214 0 0
Hiscock	7,135 0 0
Collingson	6,899 0 0
Hurst	6,807 0 0
Aries	6,718 0 0

For army and navy stores, Regent-street. Mr. A. Bedborough, architect. Quantities by Messrs. Curtis & Sons:—

		Old Materials.
Brass	£13,390 0 0	£130 0 0
Dove	13,398 0 0	110 0 0
Sprake & Foreman	12,930 0 0	345 0 0
Colls	12,927 0 0	169 0 0
Mark	11,963 0 0	300 0 0
Chappel	11,663 0 0	311 0 0
Green & King*	11,450 0 0	360 0 0
Braid & Co.	11,188 0 0	110 0 0

* Accepted.

For new tramp-wards and superintendent's rooms at Staines Union. Mr. George Judge, architect. Quantities supplied by Mr. W. H. Brayshaw:—

Boyce (accepted)	£1,937 0 0

Additions to the King Harold public-house. Messrs. Somerville & Hill say their tender was 394*l.*, not 254*l.*, as stated to us.

Chatham.—The Tender of Mr. J. G. Naylar, of Rochester, amounting to 3,443*l.*, has been accepted by the Admiralty for the erection of new schools for the children of the Royal Marines; also a teacher's residence. The excavations and foundations have been executed by the Admiralty, who also provide bricks and stonework for the building, which will make the total cost upwards of 5,000*l.*

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